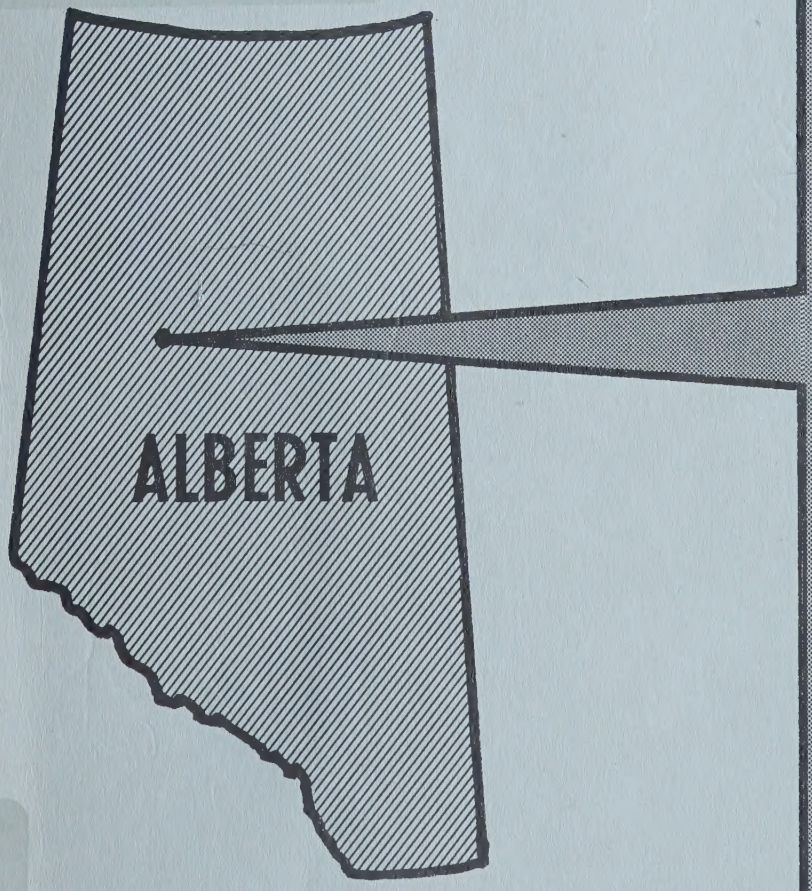
SOCIO-ECONOMIC STUDY

TANGENT AREA



By

RURAL DEVELOPMENT RESEARCH
BRANCH
ECONOMICS DIVISION
ALBERTA DEPARTMENT OF AGRICULTURE

PROVINCE OF ALBERTA
DEPARTMENT of AGRICULTURE

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Minister

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Deputy Minister

SOCIAL AND ECONOMIC STUDY

TANGENT AREA, ALBERTA

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PREFACE

In 1965 a small group of local residents in the Tangent Area of the Alberta Peace River country met to discuss the problems of low income which existed. The group decided that several underlying factors appeared to be the cause of low farm income and resultant depressing effects on standards of living. As a result of this meeting, a local planning committee was established to work co-operatively with the District Agriculturist and the Secretary of the Local Improvement Districts. This group subsequently requested the assistance of the Economics Division of the Alberta Department of Agriculture to more completely analyze the total social and economic situation relative to the 200 farm families in the area.

An A. R. D. A. project financed jointly by the Federal and Provincial Governments was established to support the study. Mr. V. T. Janssen, Supervisor of the Rural Development Research Branch of this Division, was named project leader and with the assistance of his staff and the co-operation of the local people, farm surveys and interviews were carried out and the analysis completed. This report is the result of the project.

It is hoped that the report will serve as a useful guideline to local people for improving their own conditions and to governmental agencies which may be called upon to participate in improvement of the socio-economic situation in the area.

We herein acknowledge the assistance and co-operation of all those people who participated in any way in bringing this study to its final form.

GLEN R. PURNELL, Director
Economics Division

ACKNOWLEDGEMENTS

Special recognition is extended to the various municipal and provincial officers who were instrumental in setting forth this study:

- to the local Tangent A. R. D. A. Committee, consisting of George Cloutier, Rae Erickson, Frank Lambright, N. Granger, J. Seward and J. Stern, who organized meetings and informed usoon the nature and extent of problems in the area,
- to the farm operators for their co-operation during interviews,
- to Ghislain Bergeron, who assisted members of the Rural Development Research Branch in conducting the interviews,
- to Deloris Snyder (technologist) and Cheryl Gallagher (typist) who organized and prepared the data in its present published form,
- to Tom Williams, Assistant Agricultural Statistician, Economics Division, who assisted in statisticial analysis,
- and to all other individuals who made contributions and assisted in review of the manuscript.

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SUMMARY

The Tangent Area has undergone three main periods of settlement. Initially the pioneers came to the area in the late 1920's, followed by another major influx during the depression years. Finally, after the end of World War II, new land was opened up to a number of war veterans through the Veteran Land Act.

The progress of these people has been extremely varied. Because of limiting factors such as isolated location between major rivers, adverse weather conditions and only average soil, some have not been able to accumulate sufficient resources to provide themselves and their families with satisfactory levels of living.

The farming conditions in the Tangent Area have been depressed, particularly in the last few years, because of a number of factors. The first and foremost is climate. While there are no meteorological stations located within the area to substantiate any claims, there appears to be evidence that adverse weather conditions have decreased the yield of crops. Another factor is the lack of sufficient land and capital resulting in the farming operation being too small to be profitably viable. In many cases the level of technology appears to be rather low and has contributed to depressed incomes.

Generally, the farm operators appear to fall into four main categories. The first are the ones that have sufficiently large operations and a level of management sufficient to return to the operator an income which will cover operating expenses, repay debts and provide a suitable level of living for himself and his family. Approximately one-quarter of the operators fall into this category (if returns from non-farm employment are added to net farm income).

The second group are the operators who lack sufficient land and capital or technology, or a combination of one or more of these factors required to cover the expenditure referred to in the first group. Many of these operators would be able to succeed if assistance was given to provide additional land or capital, or to improve their level of management by additional training.

The third group consists of the operators who would like to obtain full-time non-farm employment. Presumably, they would dispose of their holdings in the area and in some cases assistance in retraining and/or rehabilitation would be necessary.

The final group is a small minority. Apparently they are unable to accumulate sufficient land and capital to provide a suitable living for the family, do not have the level of management required to become successful farmers, and do not wish to accept non-farm employment.

The income levels can be related to some extent to the four groups of farmers referred to previously. The first group, with the highest farm incomes, can generally get along without outside assistance. The other three groups can be helped considerably by various policies, but the type of policy implemented would vary according to the needs of the group. Additional informal training by Agricultural Extension would be beneficial for group two. Also, this group can be helped with the introduction of a program to provide additional credit for the purchase of more land or the improvement of present holdings. The feasibility of additional loans would have to be considered on an individual basis. Ideally, each operator requesting further credit should complete a partial budget on the operations which would be financed with the additional loan. Various government programs will accomo-

date those members of the third group who desire to sell their farms and seek alternative employment.

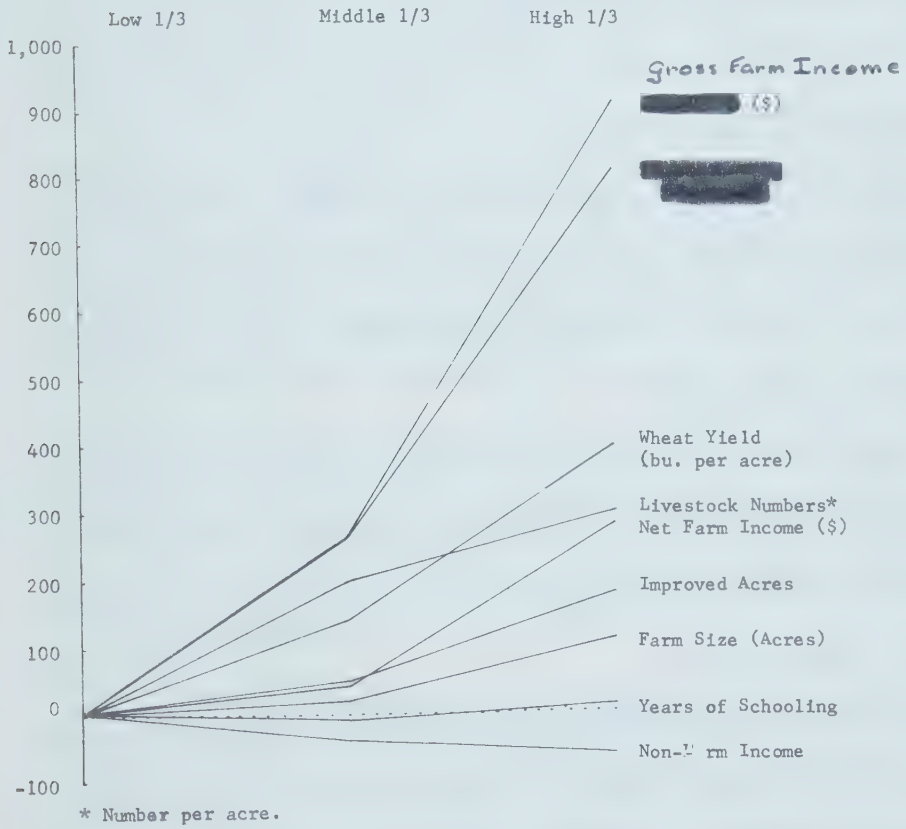
In order to determine some of the factors responsible for growth and change, the farm operators were divided into three gross farm income groups: the low third, the middle third and the high third. The diagram on the following page shows the comparison of various indicators in relation to the low group in an effort to determine the degree to which certain factors are associated with gross farm income.

In the middle income group, the factors which indicate a high degree of association with increased gross farm income are [redacted] net worth, livestock numbers, and wheat yield. They are followed, in order, by improved acres, net farm income, farm size, years of schooling and non-farm income.

The high group shows that net worth, [redacted] wheat yield and livestock numbers have a strong influence on income. Between the middle and high income groups it is noteworthy that the categories showing a high degree of relationship remain the same with only their respective order changing.

In summary, net worth and management [redacted] appear to have the greatest positive effect upon gross farm income. The relationship between income and livestock numbers (chiefly beef cattle) and wheat yield is also high. Considering the predominance of field crop production relative to livestock, the former has a greater over-all effect upon gross farm income, compared to the latter.

GROSS FARM INCOME GROUP COMPARISONS BY SELECTED CHARACTERISTICS
INDICATING PERCENTAGE CHANGE FROM LOW GROUP



* Number per acre.

Characteristics	Low 1/3	Middle 1/3		High 1/3	
	#	#	%	#	%
Farm Size (acres)	400	488	22	847	112
Improved Acres	204	310	52	577	183
[redacted] ($) Gross Farm Income	820	2932	258	8290	911
Net Farm Income ($)	-603	201	33	1700	282
Wheat Yield (bu. per acre)	3.2	7.7	141	15.9	398
Livestock Numbers (# per acre)	.19	.56	198	.75	299
Years Of Schooling	7.6	6.8	-11	8.6	13

Note of Explanation

This figure represents the effect of certain factors upon gross farm income. The zero point on the y - axis represents the value of each characteristic of the lower income group. Values for the middle and upper income groups are designated by percentage change from the lower group. Illustrating, the average farm size among the lower income farmers is 400 acres (represented as 0 in the figure). Farm size increases from 488 acres among the middle income farmers to 887 acres (112% increase) among the higher income farmers. Each characteristic is expressed similarly.

Farm size, improved acres and net farm income were all related positively to gross farm income but to a lesser degree than net worth, [redacted] livestock numbers and wheat yield. As might be expected, non-farm income is inversely related to increase in gross farm income. However, years of schooling did not appear to have a noticeable effect on income level.

The use of credit for productive purposes was not as widespread as anticipated. Some of the money borrowed could probably have been obtained at lower rates of interest from alternative sources. The operators with the largest farms made better use of credit facilities.

Generally, the settlers had few resources when they came to the area. However, at present there is a varied distribution of wealth among the farm operators in the area with a number of social and economic factors leading to the varied accumulation of resources.

The production of field crops is by far the largest agricultural enterprise in the Tangent Area. Wheat appears to give the highest returns per acre and has been the cash crop for many years. Barley, flax, and rapeseed are other comparatively common grains.

One of the reasons for the comparatively small numbers of livestock kept by operators in the area is the long winters. This makes the feasibility of a cow-calf operation questionable; however, more data is required to determine the net returns on this type of operation. Hog production is low. Lack of knowledge on swine husbandry appears to be the most limiting factor to increased production. Marketing facilities appear to be adequate.

Another enterprise which deserves further study is the production of honey. Bee keeping appears to be well suited to the area, but only one respondent had honey as a major source of revenue, while one other was intending to pro-

duce honey in the future.

Social criteria were also measured in terms of the gross farm income groups. Among the measurements attempted were socio-economic status (their material-cultural possessions plus living conditions), social participation (involvement and participation of respondents in community organizations), technological level (incorporation of current accepted and recommended farming practices) and aspiration level (satisfactions with current way of life). In each of the preceding measures, except for the study on aspirations, there is a steady increase between the lower and higher groups, indicating that the higher the gross farm income, the higher their score on those measures. The exception to the preceding (aspiration level) shows a slight decrease in the higher group compared to the middle group, which may be a reflection of general satisfaction expressed by this group with current income level, etc. Anomie, in general, is associated with low gross farm incomes.

The following is a short summary of some of the report findings and general observations:

1) Increasing income and employment opportunities, one of A.R.D.A.'s long-term objectives, is essential to the residents of the Tangent Area. To the farmer, this means whether or not he has a farm unit capable of presently or ultimately achieving these objectives. An economic or viable farm unit is defined as an operation having the capacity to provide sufficient gross income to; a) pay the operating costs, b) maintain the capital investment, c) allow for growth and d) give the family their desired standard of living.1/

Assuming the group with gross farm income meets the requirements of

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1/ 1965 Farm Business Report. Economics Division. Alberta Department of Agriculture.

an economic unit, then the recommended farm unit (with present level of technology and management) should; 1) have a family income of at least $2,500, 2) contain 847 acres (improved and not improved) and 3) have a minimum capital investment of $56,000.

If the preceding requirements are to be met, a farm consolidation program will be necessary which will invoke the retraining and/or the relocation of at least one-half of the present 209 farm operators and the redistribution of one-half of the some 57,000 acres of cultivated land. If the program is carried out, this will mean substantial expenses to cover the costs of relocation and retraining of the 100 farmers, land redistribution and early retirement (20% of the respondents are eligible for early retirement). Where possible, existing programs will handle these matters. Where not possible, new programs will have to be enacted.

If present levels of technology and management change, such radical adjustments may not be necessary. For example, if productivity could be increased by 50% (costs being relatively constant) , only one quarter of the 209 farmers would be affected.

2) Intensive education is needed in the field of "credit" education because at least one-third of the farmers obtain their credit from finance companies and other sources generally regarded as high interest rate sources. Also, many regard credit as something bad rather than as a tool for their use. Sufficient credit is available to few.

3) Closely related to (2) is the need for concentrated farm management programs to better enable the farm operator to meet the increasing challenges of farm production, e.g., cost-price squeeze.

4) The area has characteristically been noted as a good producer of

hay and forage seed. Findings of the survey reinforced this actuality and proved it to be a profitable enterprise for the individual farm operators. In view of these results, continued hay and forage seed production is encouraged.

5) Another marked feature of the survey area is its reputation as a quality honey producer. Increased honey production would not only tend to stabilize farm income but the increased number of bees should effect improved pollination.

6) Liason with Agricultural Extension could be improved. Although distance is a limiting factor (the nearest D. A.'s office being some sixty miles away), the fact remains that more people should take advantage of the Agricultural Extension Services.

7) The educational level of the area is lower than the Alberta average and the close association between inadequate education and training, unemployment and low incomes is well known. According to the survey, the educational level of those to be most directly affected by farm consolidation and retraining is Grade VII. However, a Grade IX education is a minimum eligibility requirement for such programs as Apprenticeship Training and Vocational Education. Therefore, there must be an upgrading of the educational level. One thing that should favourably affect the educational level is the maintainance of a centralized school system to provide improved and increased educational facilities.

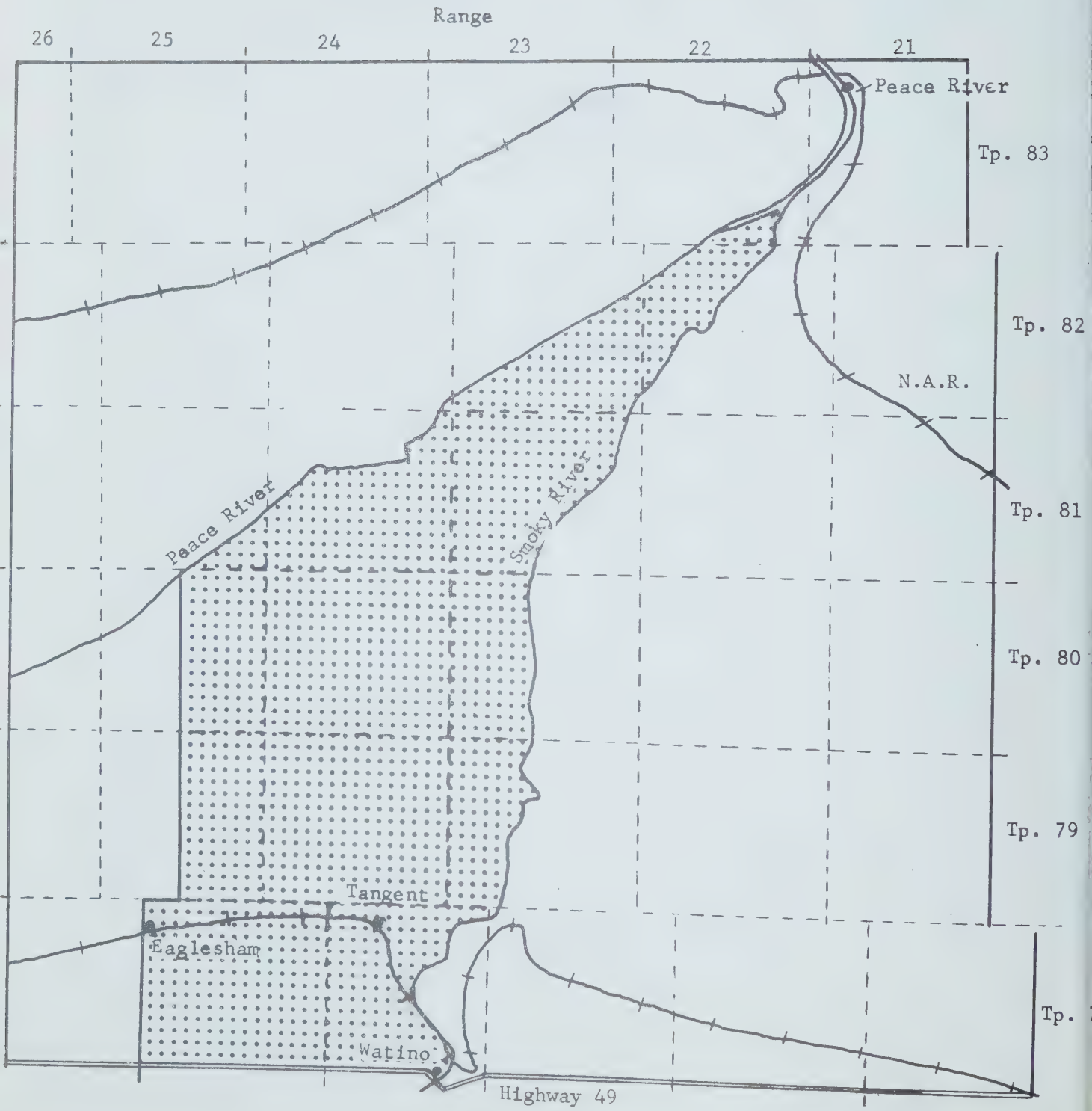
8) The study did not determine, accurately, the relationship of soil ratings to farm income. It is suggested that a comprehensive study be undertaken by farmers, with the assistance of resource personnel, to determine this relationship.

9) Almost without exception, the social measurement indices were lower for farmers having the lowest gross farm incomes. If the objectives of the program are to be properly accomplished, an important aspect will be to improve the plight of the lower income farmers through individual concentrated programs.

SECTION I

INTRODUCTION

Figure 1 TANGENT SURVEY AREA



I. INTRODUCTION

General Characteristics

The Tangent Area, located approximately 70 miles north-east of Grande Prairie and comprising some 57,000 cultivated acres between the confluence of the Smoky and Peace Rivers (see Figure 1), is situated in the Central Peace River District. Measuring approximately eleven miles in breadth at its southern boundary, and extending over thirty miles in a general north-eastern direction to a point just south of the town of Peace River, the area presents a uniform flat to slightly rolling perspective of farm and woodland. Except for the deep valleys of the Peace and Smoky Rivers, elevations generally range from 2,000 - 2,500 feet above sea level.

The climate of the Tangent Area is described as boreal[1/], having wide differences in the periods of light and darkness, generally low precipitation, light evaporation and cool temperatures. Production of certain crop varieties in the survey area is restricted because of climatic conditions; however, the influence of warm Pacific air masses and the extended hours of daylight over the growing season help compensate for the restrictive climatic conditions.

1) Mean daily temperature (year) 34°
2) Mean daily temperature (May - September) 55°
3) Mean annual length of frost-free period, 88 days
4) Mean amount of precipitation (year) 16 inches
5) Mean amount of precipitation (May - September) 9 inches[2/]

Historical

The agricultural history of the "Tangent Area" is comparable to that of

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1/ Northwestern Canada's Climate. Agricultural Institute Review. May-June, 1965.

2/ Climate of the Upper Peace River Region. Canada Department of Agriculture, 1965.

other districts in the Peace River Country, and other areas of Alberta. It is brief, but spectacular. Over the years there were marked surges of settlement by pioneers, the first in 1928. A second group arrived immediately before the depression, many of whom were from Quebec. The latest settlers arrived after World War II when scores of farmers settled on newly broken land.1/

In less than fifty years the bush has given way to farms and settlements. The latter include:

Watino - A contraction of the Indian word meaning valley, Watino was the earliest settlement in the area. In 1915, the completion of the railway bridge turned the tiny settlement into a boom town. Many of the railway workers stopped off in the Watino vicinity and became some of the earliest homesteaders.

Tangent - Named by surveyors because the geometric line from Watino to Tangent forms a tangent, the hamlet was initially settled in 1928. The early thirties saw the establishment of a sawmill in the area. It was not until 1938 that the potential of the soil for legume production was noted. The Lassiter Project began an era of marked settlement in the area.

Eaglesham - Settled about the same time as the Tangent Area, it is the largest settlement in the area. It primarily serves as a small agricultural center.

Background Data

A review of the economic and social conditions in the Tangent Area by respective municipal and provincial authorities indicated several important

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1/ After W. W. II, the Federal Governemnt cleared land for the settlement of war veterans north of Tangent. The project was referred to as the Lassiter Project.

findings. These include: (1965 data)

1) Of the 209 resident farmers, twenty-three had tax arrears of two years and over and thirty-six had unpaid A.R.A.A.[1/] loans for one or more of the following years - 1958, 1959 and 1964.

2) Information from P.F.A.A.[2/] officials indicate that four of the eleven townships received payments in nine of the last twenty-four years. The remaining seven townships have received P.F.A.A. for three to six years.

3) Eighteen families are currently receiving welfare and forty-one families have received assistance since 1960. The average cost of assistance since 1960 has amounted to $5,000 per year.

4) There were large numbers of high school drop-outs; more boys than girls and some at a very early age. One important reason for leaving school appears to be that the young people are required to work at home.

In view or the preceding conditions and other reasons, the farmers met voluntarily to discuss their problems, the apparent causes and possible solutions. As a result of public meetings and a subsequent response to the request by the Agricultural Service Board, a survey was requested. In response to the request, the Rural Development Research Branch of the Economics Division of the Alberta Department of Agriculture conducted a survey in the spring of 1966, the results of which are compiled in this report. A description of the project follows:

1) Name of Project: An Economic Analysis of a Selected Small Farm Area in the Peace River Area—Alberta.

2) Objectives: There are pockets of low income farmers in various areas of Alberta. One of these pockets is situated near Tangent

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1/ Agriculture Relief Assistance Act

2/ Prairie Farmers Assistance Act

in the Alberta Peace River Country. The purpose of this project is to conduct a survey of the residents in the area to more clearly delineate these problems, their causes and to suggest methods of improving the situation.

3) Benefits: To provide information to be used by the local people for steps which may be open to them to individually or collectively improve their income level. This information will also be useful to government(s) which might be called upon to provide assistance in the area. Ultimate benefits will be related to income levels attained by the people.

4) Project Description: The area involves 57,240 cultivated acres contained in 209 farms, an average of 274 cultivated acres per farm. In addition to the factors previously cited, the local people felt that the confinement of the area (by the rivers) created unique circumstances as justification for a study to be made. In response to their request, a sample survey of the farm operators was conducted. The questionnaire used in the survey was designed to obtain information on individual farm circumstances as well as personal impressions of external factors (outside the farm unit) which may be causing difficulty. Economic analyses were made of the completed questionnaires and consideration was also given to the sociological problems in the area. The survey and analysis was conducted in the spring of 1966 before farm work commenced.

5) Organization: The Agricultural Service Board and the Local A.R.D.A.

Committee of I. D. 132 sponsored a meeting of farmers in the area in an effort to encourage 100 per cent co-operation at the local level. Local committee members volunteered to assist in the field survey by personally encouraging co-operation of individual farmers in response to the questionnaire. The Rural Development Research Branch, Economics Division, Alberta Department of Agriculture, was responsible for designing the questionnaire, carrying out the survey, and analyzing the data.

The Sample

A questionnaire was developed consisting of numerous questions pertaining to the farmer, his family, his community, his business, etc. The questionnaire was designed to elicit information on individual farm circumstances.

A random sample of 106 farmers was then selected to be interviewed; however, due to sample losses, information was obtained from only 74 respondents. A major reason for the large number of rejected samples was due to the outdated list of farm operators. Many of the listed farmers had retired, sold out or passed away. Farmers who owned and/or operated land in the Tangent Area but did not reside on their farms or in the survey area were not included, as well as those who worked off the farm and were not available for interviews at the time the survey was conducted. Other respondents were not included because of their refusal to answer questions. This element was very small.

In the final analysis there were 73 respondents interviewed, but this number was further reduced to 72 because the eliminated farmer had all of his land summer-fallowed, had no farm income of any description and worked off the farm for more than six months. Whereas Section II speaks in general terms of

the Peace River block and Alberta, Section III exclusively deals with the social and economic characteristics of these farm operators.

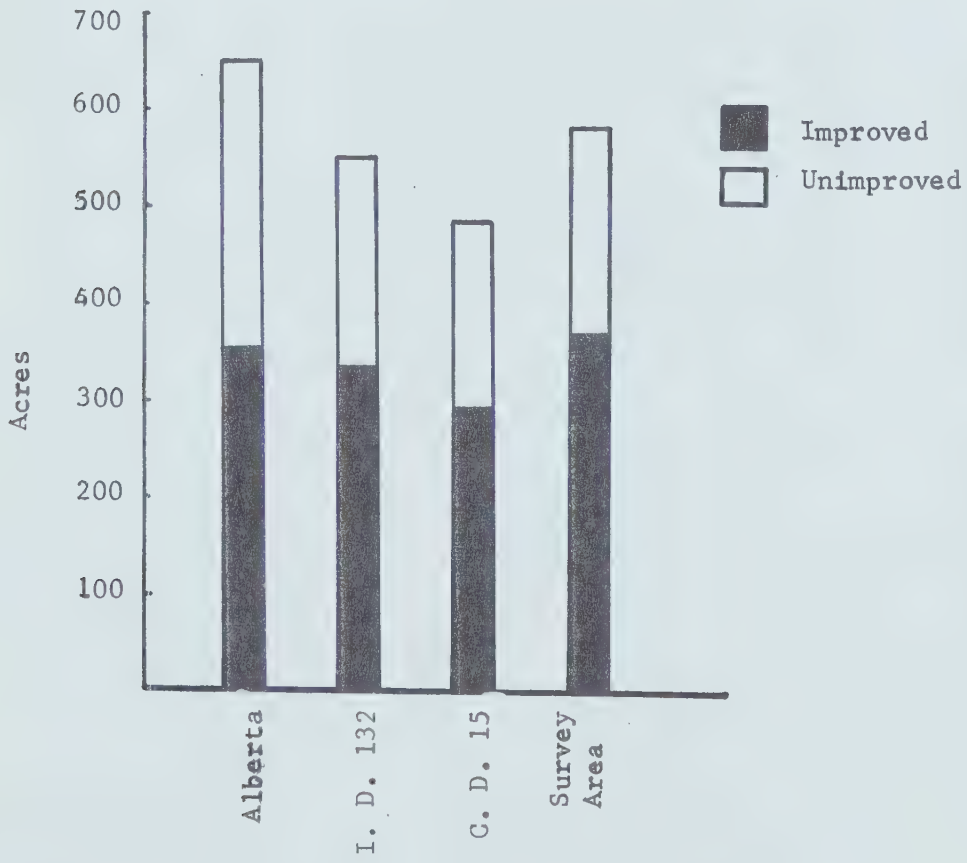
SECTION II

Comparisons between the Tangent Area and Improvement District #132, Census Division #15 and Alberta, emphasizing farm type, farm size, land use, agricultural production, capital values, and farm income.

Farm Size

The size, in acres, of an average farm in the Tangent Area is approximately the same as in Improvement District 132 and Census Division 15, but is smaller than Alberta's average. The data in Figure 2 shows the average farm size to be greater in the Tangent Area, but allowances have not been made for the fact that the survey area data is current while the other data comes from the 1961 Census.* Because increasing farm size is characteristic of present farm trends, it is assumed that Census Division 15 and

Figure 2 AVERAGE SIZE OF FARM IN ACRES



Source: Table 1, Appendix

* In every case where comparisons are given among I. D. 132, C. D. 15, Alberta and the Tangent Area, Tangent data is 1966 whereas the other data is completely 1961 Census of Canada data. This will explain some of the differences.

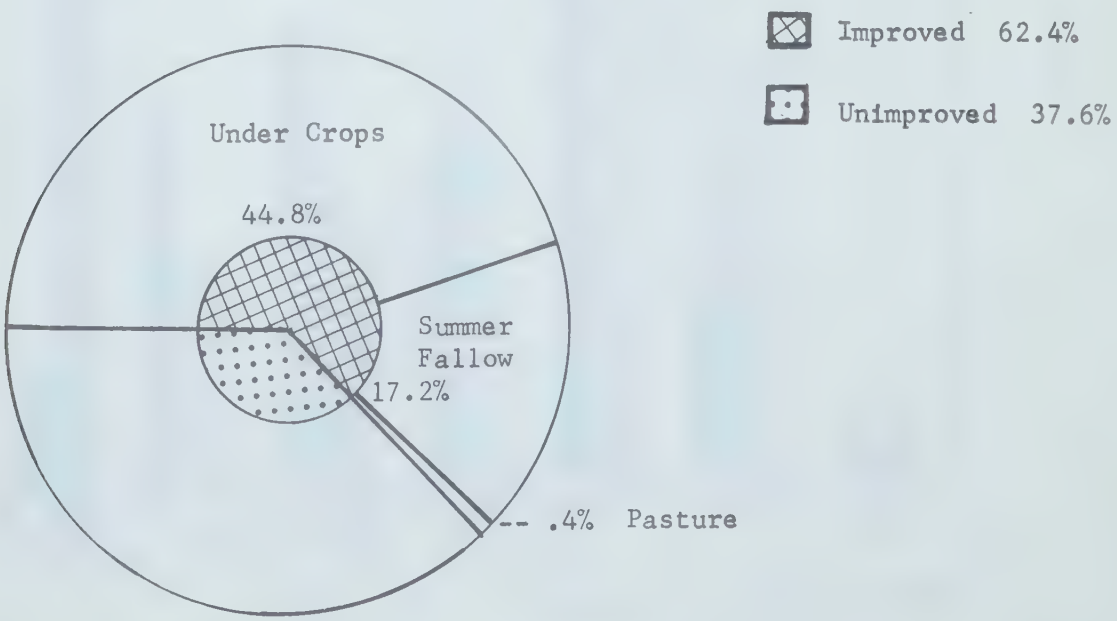
Improvement District 132 will currently indicate an average farm size comparable to the Tangent Area.

The sampled respondents operated 42,403 acres, an average of 581 acres per farm operator. Figure 2 shows the average farm size and the number of acres that are improved in the afore-mentioned localities.

Land Use

Figure 3 indicates that 62.4% of the farm land in the Tangent Area is improved. This represents an average of 363 acres per farm, of which 261 acres are field crops, 100 acres summer fallow and 2 acres pasture land. The proportion of summer fallow to improved acreage is 27.5%, which is substantially high considering the fact that in the area it is usually unnecessary to fallow the land. However, the high proportion of land under summer fallow can be partially explained by the fact that, in the spring of 1965, farmers in the area had difficulty getting on some of their land. This was due to excessive moisture and partial flooding.

Figure 3 LAND USE



Source: Table 1, Appendix

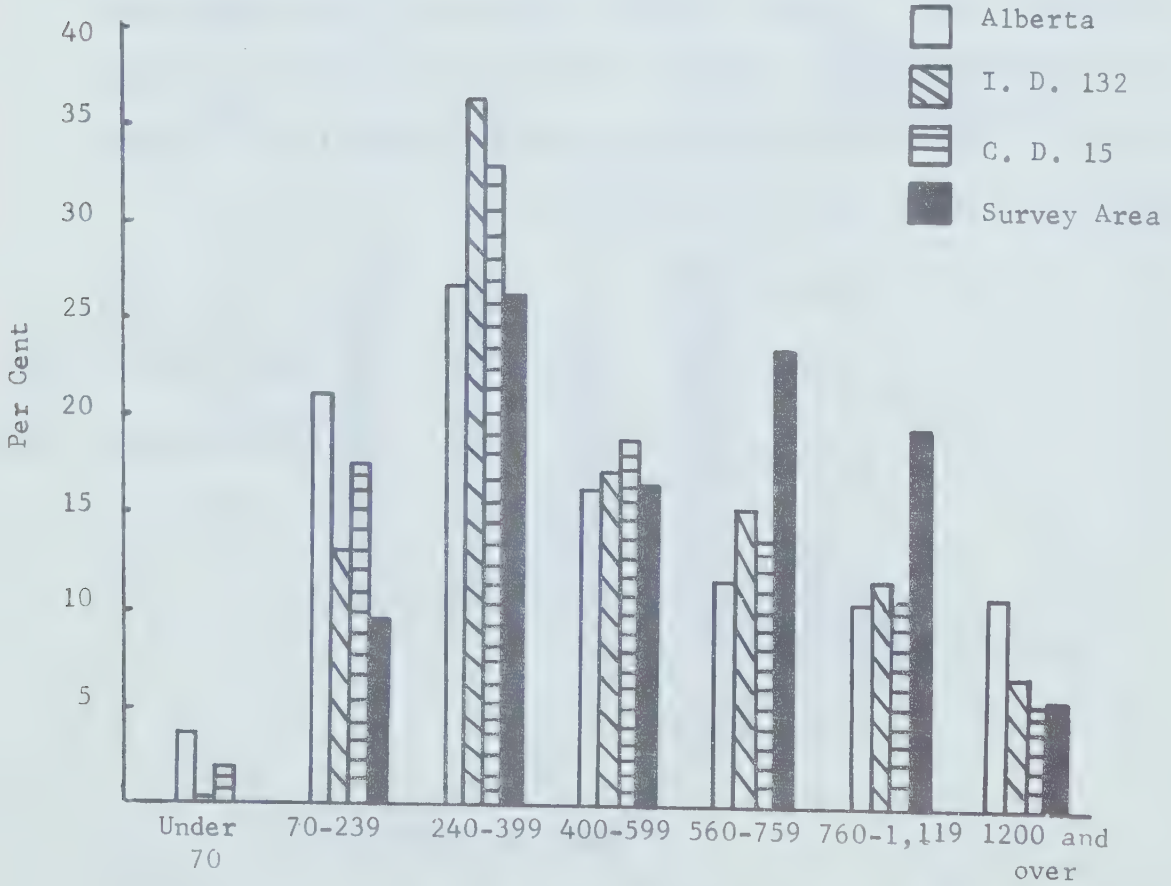
Unimproved land comprised 15,940 acres (220 acres per farm) of which 13,900 could be improved. The area that could be improved represents 32.8% of the total land area or 190 acres per farm. The remaining land, 4.8%, was considered waste.

Land use patterns are similar for the Tangent Area, I. D. 132, C. D. 15 and Alberta (see Table 1, Appendix).

Distribution of Farms According to Size

Farm distribution, according to size, in the Tangent Area follows a similar pattern to that of I. D. 132. Figure 4 indicates a proportionally

Figure 4 FARM SIZE AND DISTRIBUTION BY PERCENTAGE (In Acres)



Source: Table 2, Appendix

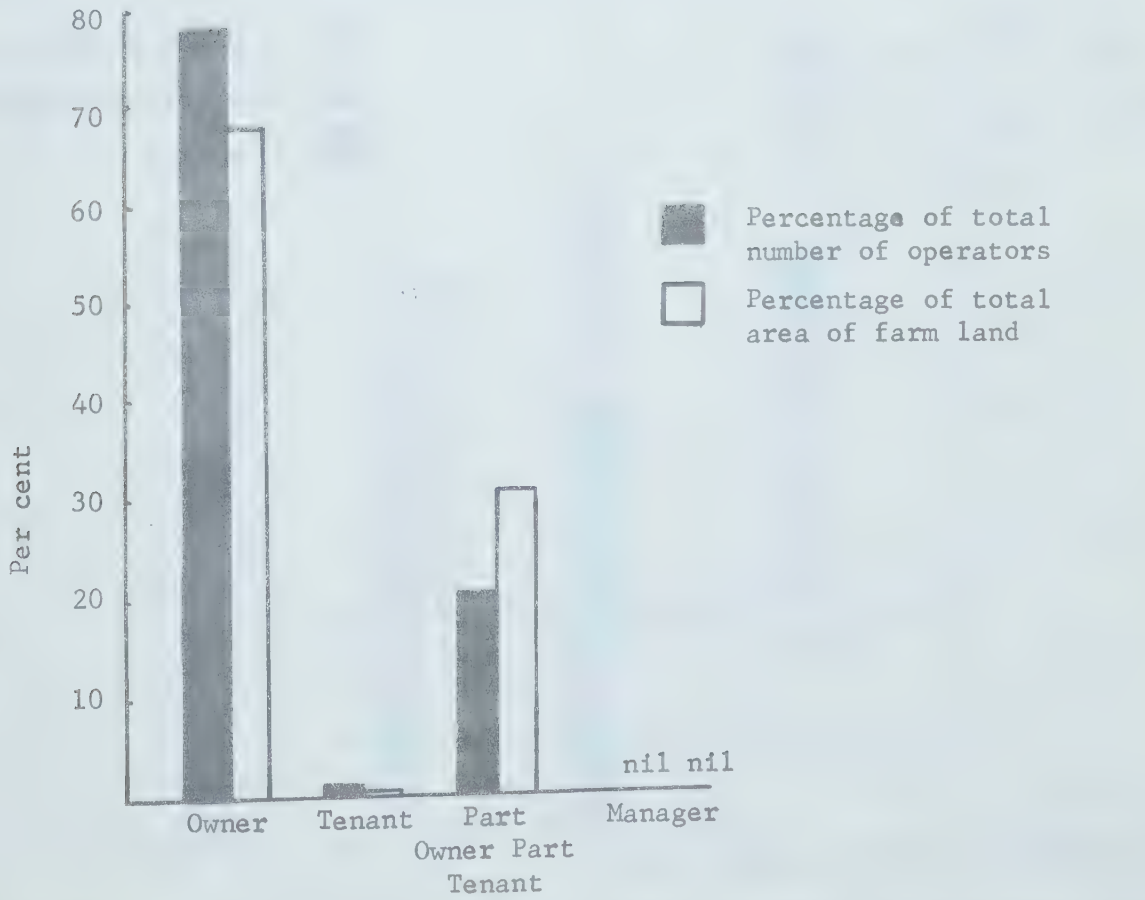
greater percentage of farms in the 560 - 759 and 760 - 1,119 acre categories in the Tangent Area compared to the other districts. It is likely that much of the difference accrued in the period between 1961 and 1966.

Land Tenure

The proportion of land operated by tenants is considerably less in the survey area than other parts of the province. This is probably the reflection of the relatively static position of farm tenure. (see Table 3, Appendix).

Figure 5 indicates that while 78.1% of the operators own all of their land, only 68.1% of the total land area is involved. On the other hand,

Figure 5 LAND TENURE IN TANGENT AREA



Source: Table 3, Appendix

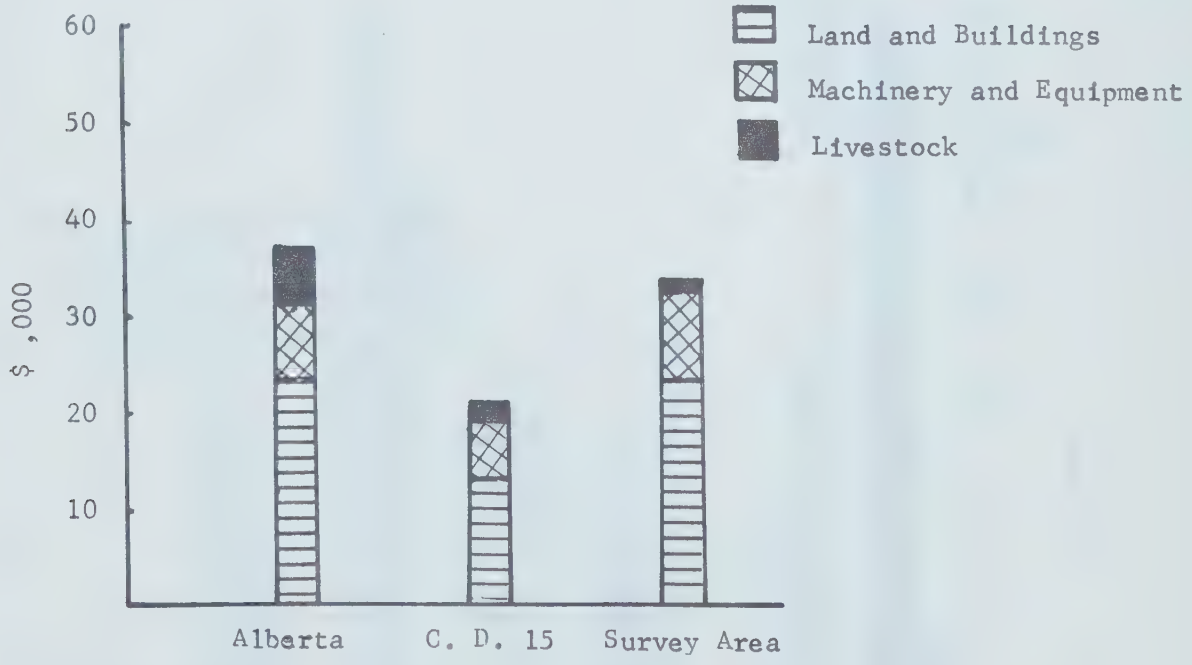
20.5% of the operators who are part-owner, part-tenant, farm 31.4% of the land. It may be concluded, therefore, that the larger operators are endeavouring to expand their farm units.

In many areas in Alberta, numerous land owners have left their holdings to accept non-farm employment and have leased their farms to other operators. It appears that this transition has not occurred to any great extent in the Tangent Area.

Value of Farms

The average capital value of farms in the survey area in 1966 was $33,913[1/] compared to $21,236[2/] in the Peace River Area. A considerable portion of the

Figure 6 AVERAGE CAPITAL VALUE PER FARM



Source: Table 4, Appendix

1/ Based upon current market values.

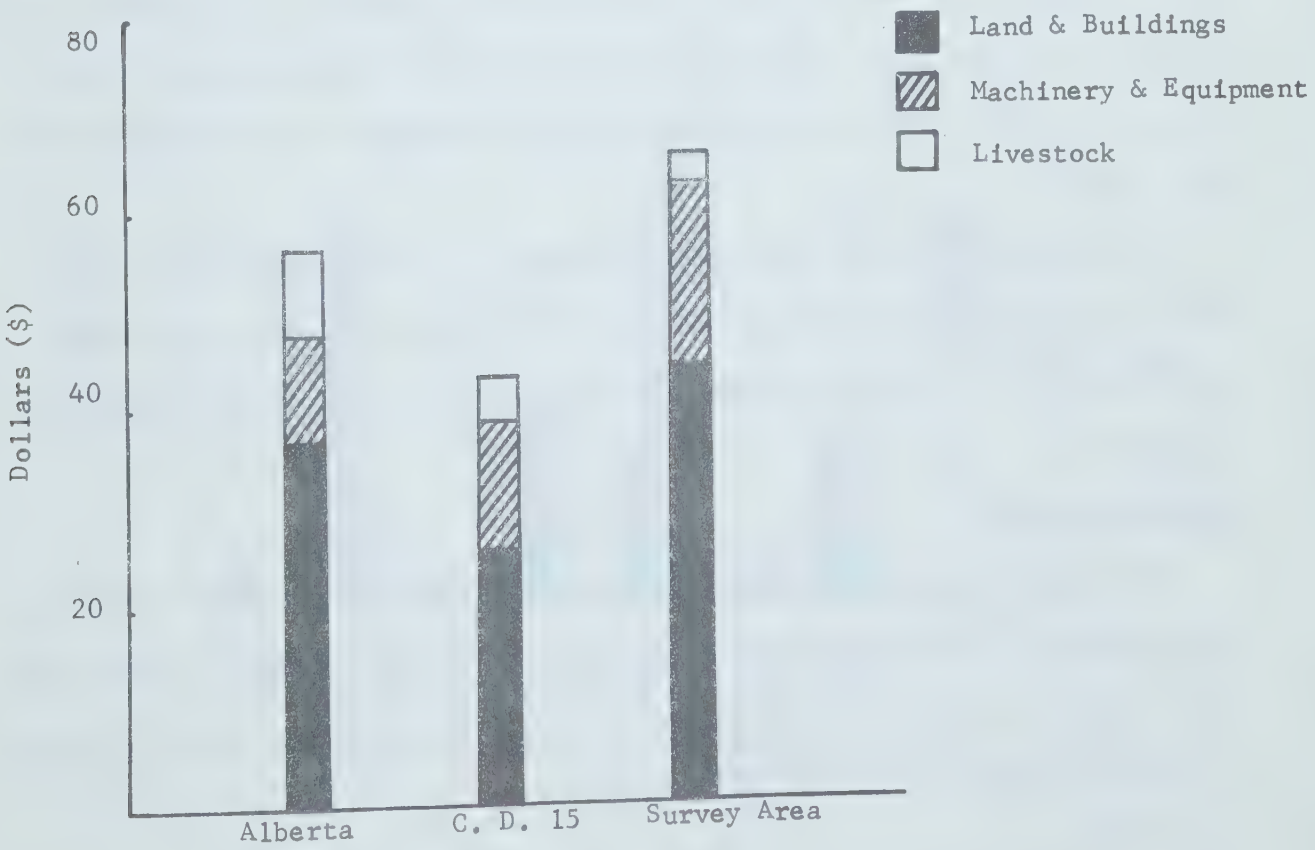
2/ Based upon 1961 Census of Canada market values.

difference would be accounted for by the increase in the value of land and increase in average farm size between 1961 (Peace River Area Figure) and 1966 (Tangent Area Figure).

It is interesting to note that the present average value of livestock on farms in the Tangent Area is only $1,508 compared with $2,134 in the Peace River Area and $6,164 for Alberta. The significance of the livestock contribution to capital value is further reduced when Alberta and C. D. 15 figures are updated. (See footnote on page nine for explanation). Values of land - buildings and machinery - equipment are more in accordance with expected trends, considering the year differential.

The average capital value per acre indicates trends comparable to the

Figure 7 AVERAGE CAPITAL VALUE PER ACRE



Source: Table 5, Appendix

capital value per farm (values in both cases were based on the evaluation of assets as reported by the operators). Again, the value of livestock is proportionally smaller with machinery - equipment and land - buildings being above average. Total capital value per acre is somewhat higher than the C. D. 15 and Alberta averages, however, the five year difference in source of data would explain this phenomenon. It would be safe to assume that were the data strictly comparable, Alberta figures for capital value (per farm) would average higher than the survey area.

The distribution of farms according to total capital invested indicates that, at present, 20.6% are valued at less than $14,950 compared with 44.7% for C. D. 15 in 1961. (See Table 6, Appendix). This, in itself, is not significant because of the appreciation of land values in the interim period. It is important to note, however, that over three quarters of the farms have a smaller capital value than that required to return approximately $3,000 labour earnings to the operator under typical management and average prices and costs.1/

According to Purnell, the lowest estimate of capital requirements per farm for various types of operations in 1962 was approximately $50,000.2/ Accordingly, farms in the Tangent Area generally can be termed "under capitalized".

Types of Farms3/

The type of farm was determined on the basis of sales of farm products. For example, if 70% or more of the agricultural sales income of a farm came

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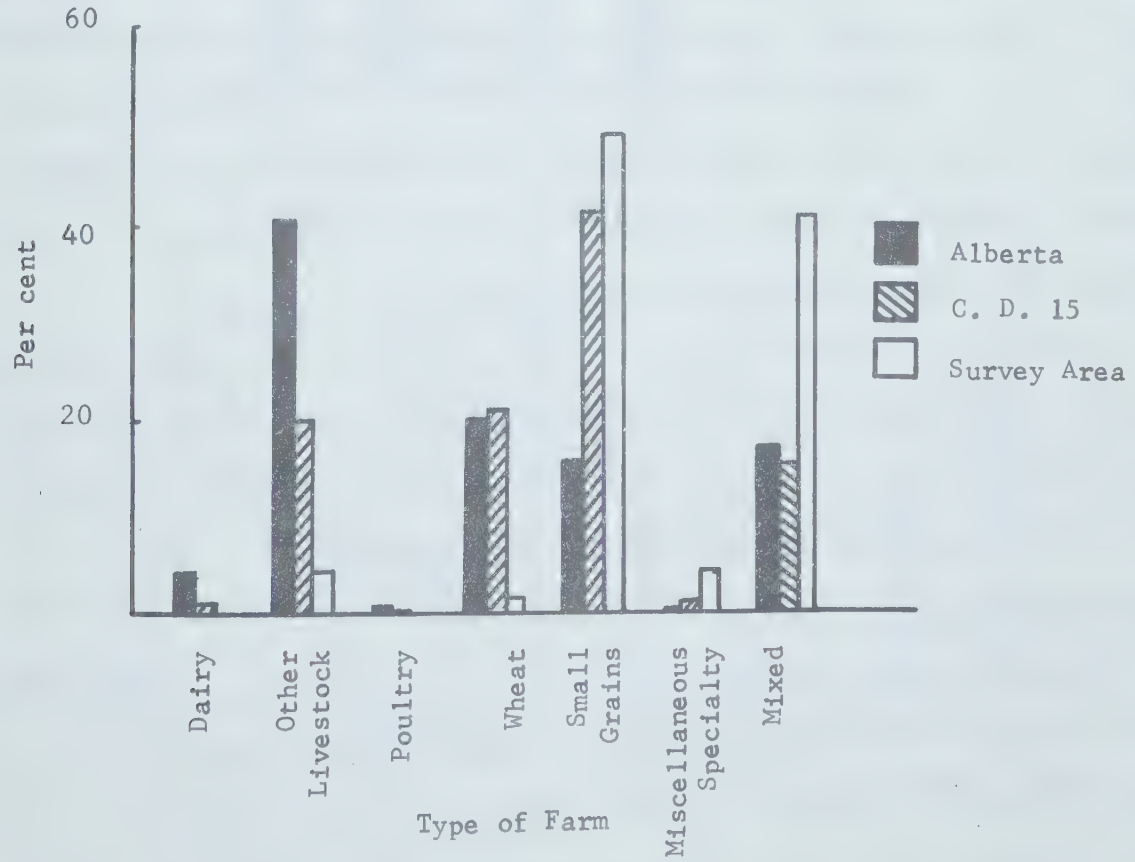
1/ Purnell: "Credit in Agriculture". Economics Division. Alberta Department of Agriculture. November, 1962.

2/ Ibid

3/ Census of Canada classifications.

from the sale of wheat, this particular farm would be classified as a "wheat farm". Similarly, if 70% or more of the sales income was from dairy and dairy products, it would be classified as a "dairy farm". The same principle applies to other livestock, poultry, small grain and miscellaneous specialty (which includes forage seed) farms. However, if no single category exceeded 70% of the agricultural sales income, the farm was classified as "mixed". In the category of mixed farms there are three sub-divisions: livestock, crop, and other. For example, if less than 70% but more than 50% of the sales income came from the sales of field crops, then this particular farm is classified as "mixed field crops", likewise, for "mixed livestock farms". Miscellaneous specialty includes honey production.

Figure 8 CLASSIFICATION OF FARMS BY TYPE



Source: Table 7, Appendix

Small grain farms and mixed farms, according to the preceding classifications, dominate the types of farms. Wheat and livestock farms are rare, as Figure 8 indicates.

Information was available on the type of commercial farm for the 1961 Census. A commercial farmer was defined as one receiving over $1,200 from the sale of agricultural products. A comparison of commercial farmers in Alberta and C. D. 15 in 1961, and all farmers in the Tangent Area in 1966 is useful to indicate the principle types of operations. This was shown in Figure 8.

Crop Production

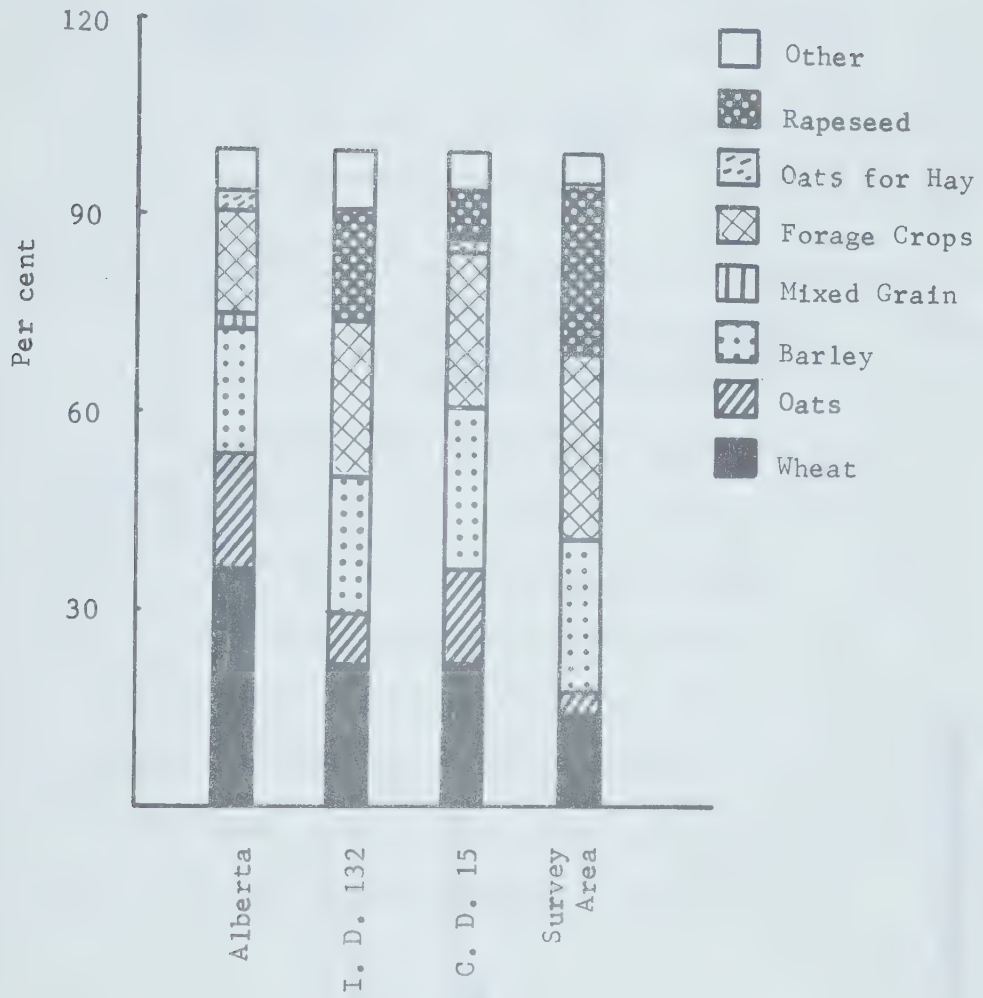
Figure 9 lists the percentage of improved land by type of crop in selected localities. It reveals that 90% of the arable land in the survey area is used for wheat, barley, rape and forage seed production. Compared to C. D. 15, I. D. 132 and Alberta, the Tangent Area has considerably more acreage in small grain production, particularly rape, but less in wheat. Some of the difference may be due to a four year time differential of data between the Tangent Area and the other localities.

A general characteristic of current farm trends is the shift from straight wheat, barley production, etc., to a more diversified operation involving more and other types of crops. This is shown in the Tangent Area where cereal crops are supplemented by forage crop production.

Livestock Numbers

Livestock numbers per 100 acres give an indication of the livestock density. Figure 7 indicated that dairy and other livestock farms accounted for only 4.0% of all farm types. Table 9, Appendix, shows that per 100 acres, less livestock of all types is found in the Tangent Area than in C. D. 15,

Figure 9 SEEDED ACREAGE BY TYPE OF CROP



Source: Table 8, Appendix

I. D. 132 or Alberta. These observations indicate that the area does not have a substantial livestock population. However, as other sections of this report will state, it does not mean that the area is incapable of supporting a greater livestock population.

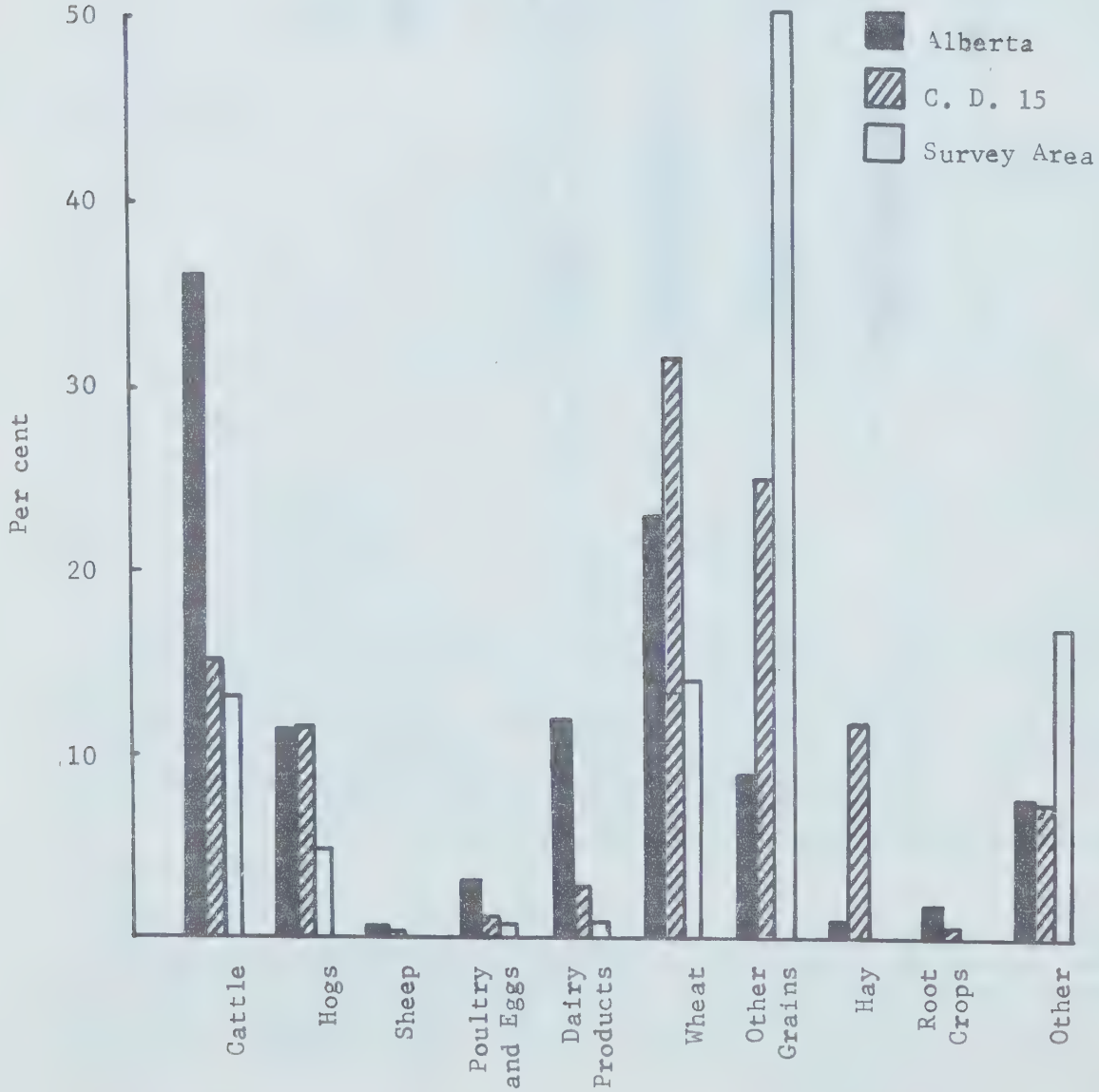
Farm Income

The average gross income from the sale of farm products in the Peace River Area generally appears to be lower than in the province. This is shown on the following page:

LOCATION	AVERAGE GROSS FARM INCOME
Alberta - 1961	$5,997
Census Division No. 15 - 1961	$3,051
Tangent Area - 1965	$3,963

The sources of income are more contrasting than the amounts. In Alberta

Figure 10 PERCENTAGE INCOME FROM SALE OF PRINCIPLE FARM PRODUCTS



Source: Table 10, Appendix

in 1961, the sale of cattle contributed the greatest to farm income, followed closely by wheat. In the Peace River Area (Census Division 15) in 1961, the sale of wheat was the greatest single source of income. The study of the Tangent Area revealed that other grains, principally rapeseed, forage seed and barley were the main products sold. This is shown in Figure 10.

Age of Farm Operators

Although there is not a marked overall difference, the average farm operator in the survey area is younger than his counterpart in C. D. 15 and Alberta. In the Tangent Area, 6% of the farmers are under 21 years of age and over 90% are under 45. This compares with 4.3% and 82%, respectively for C. D. 15. It is interesting to note that almost one quarter of the farm operators were first attracted to the area at a young age by newly opened homestead lands as recent as the late 1940's and early 1950's. As more and more young people leave the farms for urban centers, future trends should indicate a general ageing of the farm population, more in accordance with the Alberta average. (See Table 11).

SECTION III

Internal comparison of Tangent Area showing the relationship between gross farm income and social and economic criteria. This section deals specifically with the farm operators living in the Tangent Area.

A. FARM CHARACTERISTICS

Much of the assembled data compares the farm operators' gross farm income with various criteria in an effort to determine interrelationships, if any. For convenience, the farm operators were categorized into numerically equal groups - high, middle and low. The gross farm incomes for the lower third ranged up to $1,700, the middle group from $1,701 to $4,500 and the high group in excess of $4,500.

In some cases statistical analyses were employed to determine whether certain factors were correlated. The purpose of the analysis in this section was to attempt to determine the reasons for low incomes among the farming population.

Soil

N. B. As part of the national inventory of agricultural soil capability, a new soil classification has been developed by A. R. D. A.* The new classification, expressed in terms of capability for agricultural production, follows; (former soil classes roughly corresponding to the A. R. D. A. classification are shown in brackets).

Class #1 (8)	Soils in this class have no significant limitations that restrict their use for crops.
Class #2 (7)	Soils in this class have moderate limitations that reduce the choice of crops or require special conservation practices.
Class #3 (6,5)	Soils in this class have severe limitations that reduce the choice of crops or require special conservation practices.
Class #4 (4)	Soils in this class have severe limitations that restrict the choice of crops, require special conservation practices, very careful management, or both.
Class #5 (P-W)	Soils in this class are unsuited for cultivated field crops except perennial forage crops and are responsive to improvement practices.
Class #6 (P-W)	Soils in this class are unsuited to cultivation but are capable of use for unimproved permanent pasture.
Class #7 (P-W)	Soils in this class are unsuited for agriculture and hence all land areas not included in Soils Classes 1 to 6 are placed in this class.

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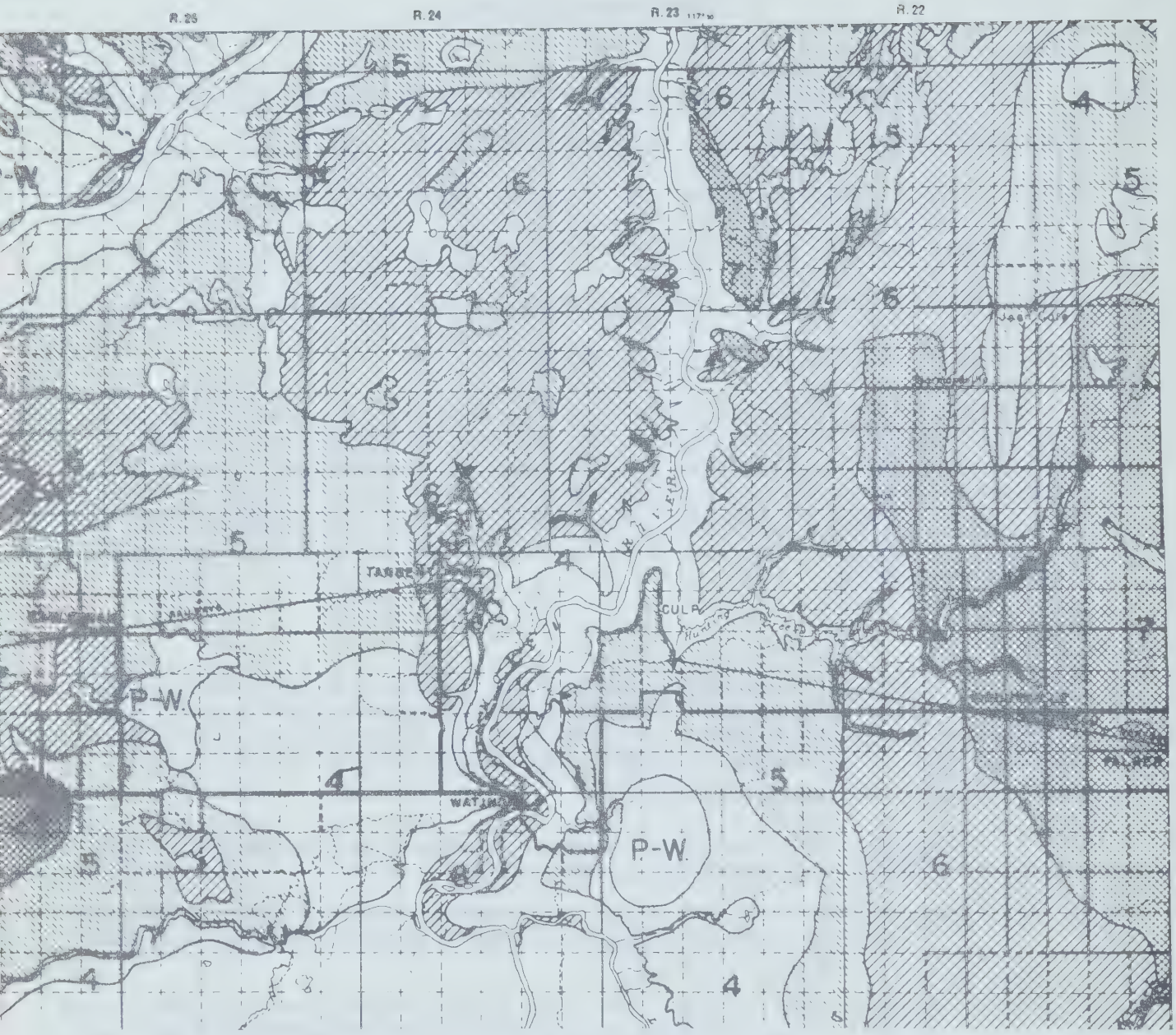
* Further studies may indicate modifications.

0 1 0 0 0 0 10 Miles

Figure 11 SOIL RATING MAP



LEGEND

Pasture and Woodland — P-W.

Poor to Fair Arable — 4

Fair to Fairly Good Arable — 5

Fairly Good to Good Arable — 6

Good to Very Good Arable — 7

Source: Soil Survey of the Rycroft and Watino Sheets Report #15. Research Council of Alberta. Dominion Department of Agriculture. University of Alberta. 1950

One of the first things to be examined in the Tangent Area was the soil rating based upon productive capacity.[1] Utilizing such data as soil characteristics, topography and rainfall, the productivity ratings obtained ranged from pasture classifications (#'s 1, 2 and 3) through five classes of arable soil (#'s 4, 5, 6, 7 and 8). Most of the soil in the survey area rated "fair to fairly good arable" (#5) or "fairly good to good arable" (#6), while no soil graded "good or very good arable" (#7 or #8). "Poor to fair arable" soil (#4) and pasture-woodlands (#'s 1, 2 and 3) were also fairly common to the area. Figure 11 shows the distribution of the soil ratings throughout the Tangent Area. The following tentative limits suggest an approximation of the productive capacities of some of the various soil groups;

1) 40 acres to pasture one head of cattle
2) between 20 and 40 acres to pasture one head of cattle
3) produced 12-15 bu. of wheat per acre (long term average)
4) produced 20-25 bu. of wheat per acre (long term average)
5) produced over 25 bu. of wheat per acre (long term average)[2]

Naturally the size of the farm that would provide adequate returns would vary with the type of soil. In the survey area many of the farmers had as many as three different soil types in their operation which, in many cases, made the setting of productivity limits difficult to ascertain. Although there does seem to be some relationship between long term yields and the previously defined limits, yields in 1965, which was a poor crop year, were generally below this figure. There appears to be other factors equally as operative in determining production, such as soil types; however, those are discussed later in the report.

An attempt to determine the gross farm income of operators on soils of

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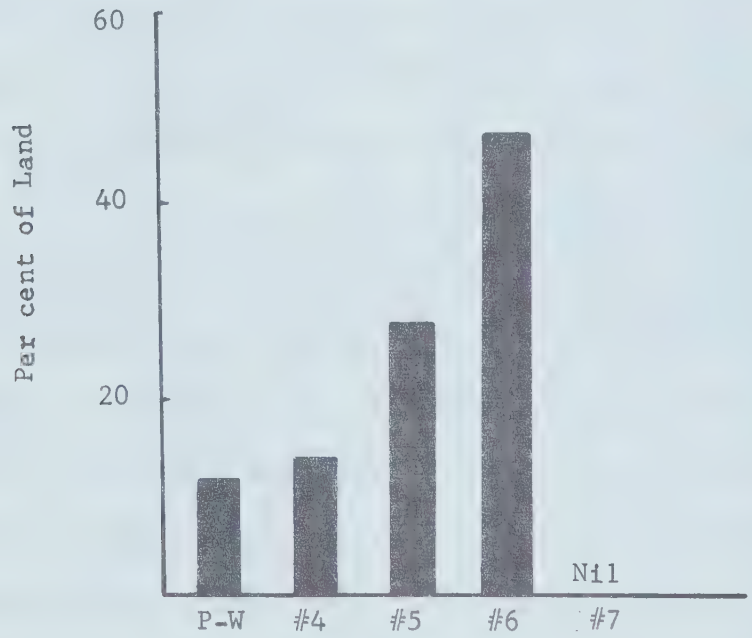
1/ Soil Survey of the Rycroft and Watino Sheets. Report #15, Research Council of Alberta, 1950.

2/ Ibid

various ratings was undertaken. The soil rating was determined on the home quarter of each operator. Where two or more ratings were applied to the same farm, the acreage of the soil type predominating was used to determine the type. Most of the operators farmed land rated as #6. The percentage on each classification is shown in Figure 12.

Figure 12 FARM OPERATORS BY SOIL TYPES



Source: Table 12, Appendix

Legend		A. R. D. A. Classification
P-W	Pasture and woodland	5, 6, 7
#4	Poor to fair; arable	4
#5	Fair to fairly good; arable	3
#6	Fairly good to good; arable	3
#7	Good to very good; arable	2
#8		1

The gross farm income of operators according to the soil rating of the home quarter is shown below on the following page:

Soil Rating of Home Quarter 1/	Number	Average Gross Income
P - W	4	$5,096
4	5	$3,322
5	19	$4,416
6	43	$3,035

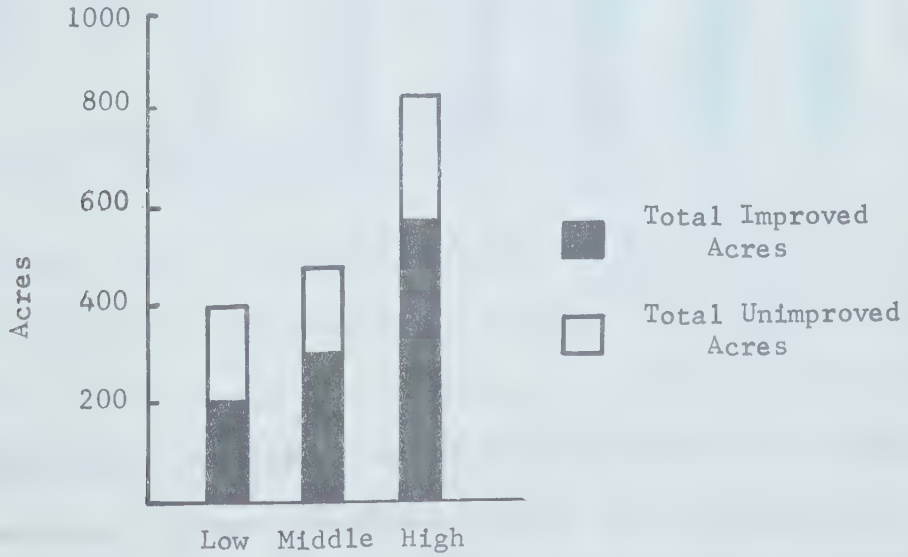
Source: Table 12, Appendix

According to the preceding data, it would appear that better soil does not necessarily mean increased gross farm income. The P - W and #4 classifications are not numerically sufficient enough to be statistically sound, however, the others should be reasonably accurate. Possibly the method used in determining soil type was responsible for the unexpected results. Whatever, it appears other factors are operable besides soil types.

Farm Size

As may be expected, the larger the farm, the greater the gross farm income. Average sizes of farms for each of the three income levels are as follows:

Figure 13 LAND USE BY ACREAGE ACCORDING TO INCOME GROUPS



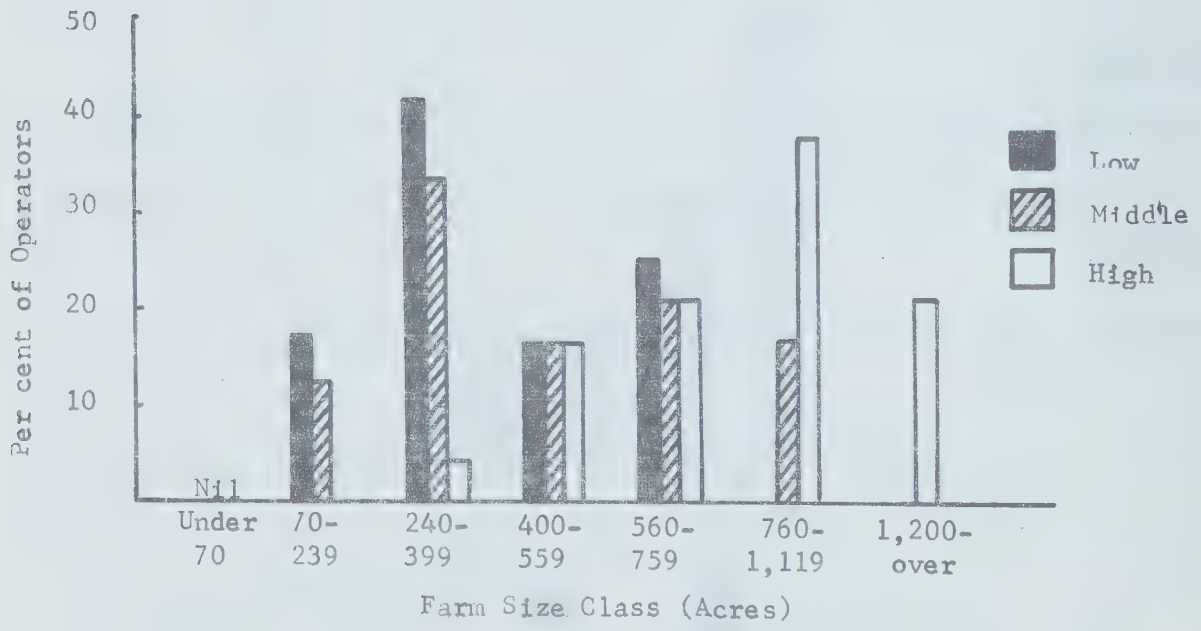
Source: Table 13, Appendix

1/ Determination of soil rating was based on the home quarter of each operator, and thus, may not be perfectly exact.

Increases are noted in farm size, total improved acres and acreages in crops as gross farm incomes improve. The quantity of land that could be improved does not follow the trend. Presumably, this reflects a shortage of capital to implement additional breaking and clearing of the land.

The distribution of farms according to acreage shows more clearly the relationship of farm size to gross farm income, as shown below. Undoubtedly, one of the major contributing factors to low incomes is small farms; however, farm acreage is only one measure of productive capacity.

Figure 14 PERCENTAGE OF FARM SIZE AND DISTRIBUTION BY ACREAGE



Source: Table 14, Appendix

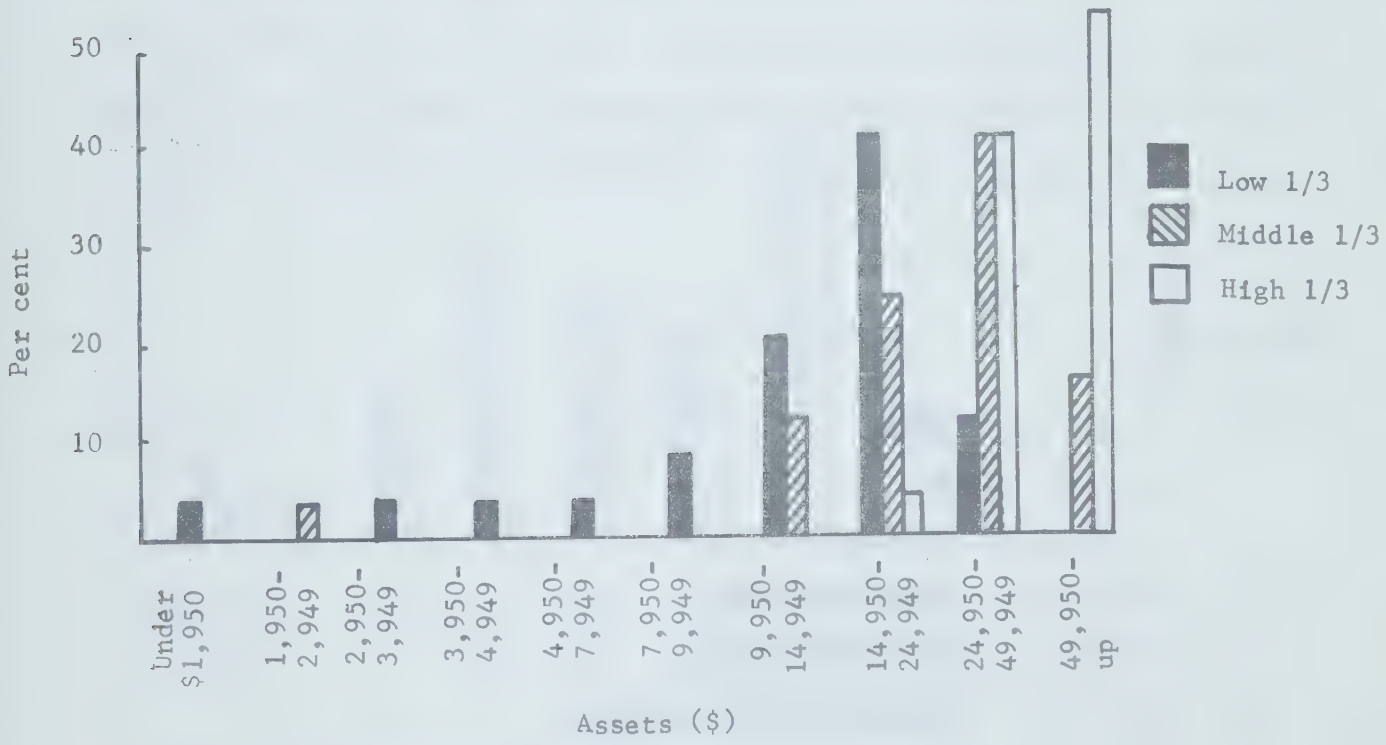
Value of Farms

It is conceivable that a small acreage farmed intensively could yield a greater gross income. Therefore, the total capital value of farms was calculated for each of the three levels of income. It appears that there

is a high correlation between gross farm income and total capital value. Only the high income group approaches the capital requirement of a typical Alberta farm (Purnell[1/]) of approximately $50,000.

The distribution of the capital value of farms according to income groups is shown in Figure 15.

Figure 15 FARMS BY CAPITAL INVESTED PER FARM



Source: Table 15, Appendix

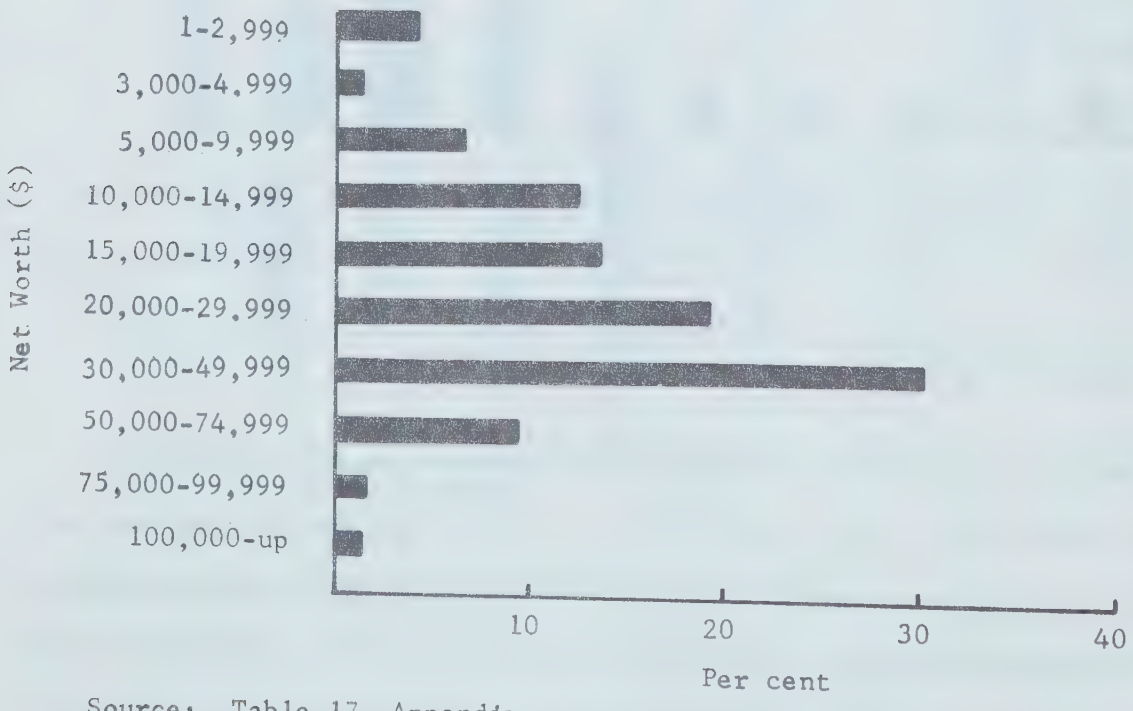
According to the survey, there doesn't appear to be any relationship between current gross farm income and value of assets when the farm was purchased, e.g., 45.7% of the farm operators in the high income group reported no assets when they purchased their farm, compared to 37.5 operators in the low income group. It is interesting to note that, in the middle category, approximately 30% of the operators reported assets in excess of $5,000

when they purchased their present farms compared to slightly over 8% for both the high and low income groups. (See Table 16, Appendix).

Net Worth

Land, capital and labour are usually considered to be three primary resources and the greater the amount of these individual factors, the more potential there is for generating income. By subtracting the total liabilities from total assets, the net worth of each operator was determined. While the average net worth was $29,272, nine operators had a net worth of less than $10,000. These included persons beginning to farm but with other employment for most of the year. The distribution of net worth is shown in Figure 16.

Figure 16 NET WORTH PER FARM

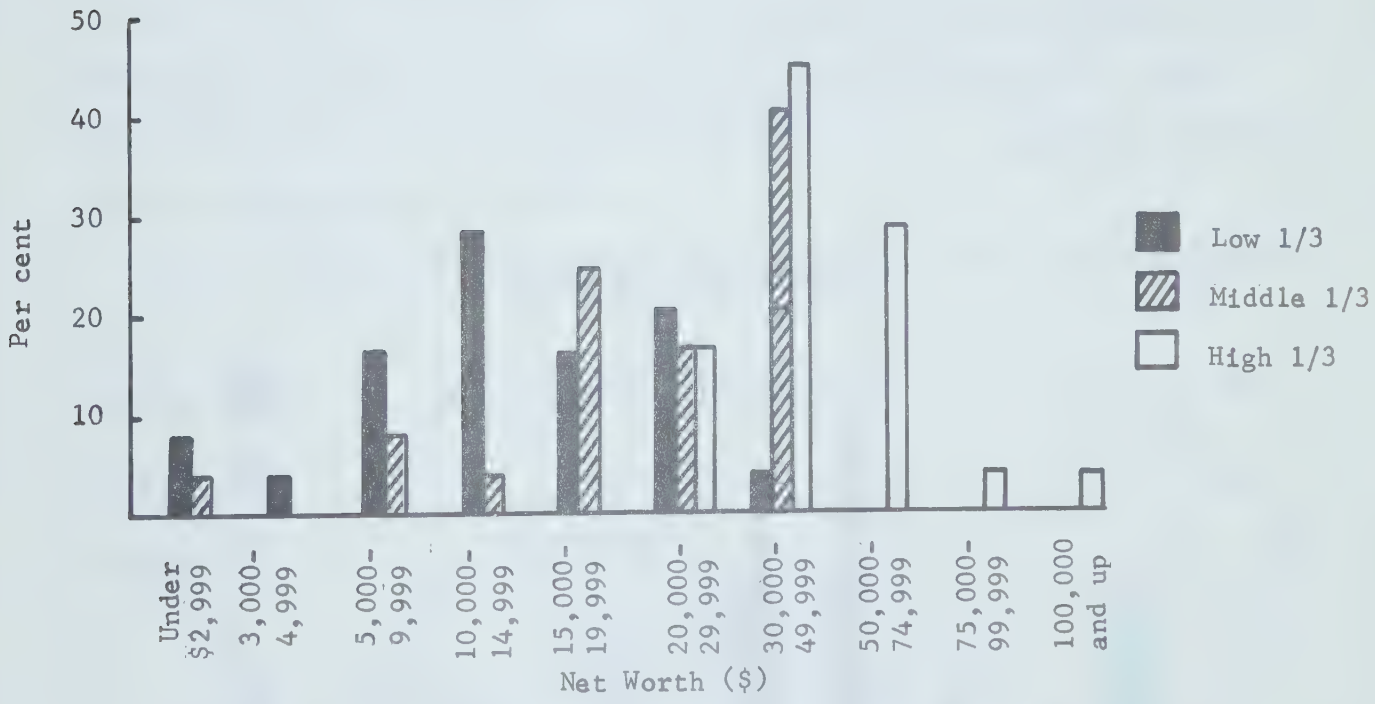


Source: Table 17, Appendix

Figure 17 shows the net worth of operators in gradations according to

the three gross farm income levels. The average net worth for the high, middle and low income groups was $47,229, $25,481 and $14,818, respectively. All of the farmers in the higher income group had net worths in excess of $20,000, compared to 68% for the middle and 25% for the lower income groups. Therefore, net worth appears to be highly correlated to gross farm income.

Figure 17 NET WORTH PER FARM ACCORDING TO INCOME LEVELS



Source: Table 18, Appendix

Each of the farmers was requested to express his individual satisfactions with respect to net worth items. They reported the following;

	LOW 1/3 Operators		MIDDLE 1/3 Operators		HIGH 1/3 Operators	
	#	%	#	%	#	%
Sufficient Land	13	54.2	16	66.7	15	62.5
Sufficient Machinery	10	41.7	12	50.0	15	62.5

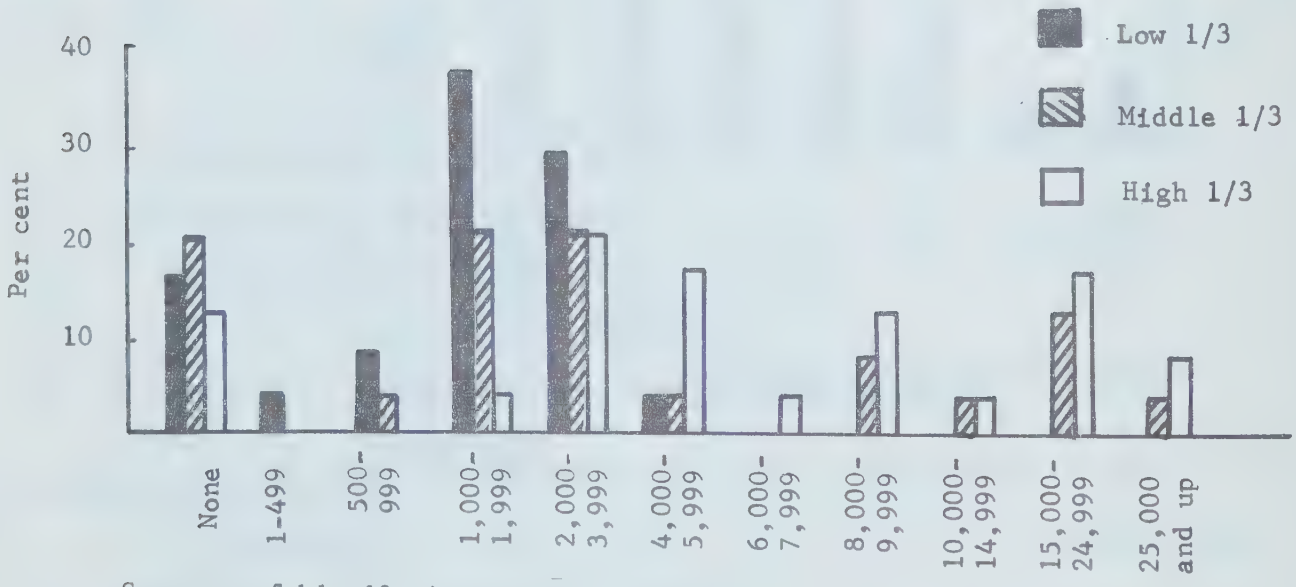
Sufficient Livestock	10	41.7	9	37.5	8	33.4
Sufficient Labour	22	91.7	17	70.8	15	62.5

Debt Structure

The existence of a debt is not necessarily a measure of income, but it may be an indication of the ability of the operator to cover costs with revenue. This may not apply if the loan was obtained for the purchase of consumer goods. The size of the loan may be considered an indication of the borrowing capacity of the operator.

Figure 18 shows the distribution of debt according to size among the three income groups.

Figure 18 AMOUNT OF DEBT PER FARM



Source: Table 19, Appendix

As might be expected, the liabilities of the low income group were less per operator than the high income group. This is probably due to a number of factors, namely, the borrowing power is less because of a lower net worth,

and the reluctance to borrow is greater because of the uncertainty of the ability to repay.

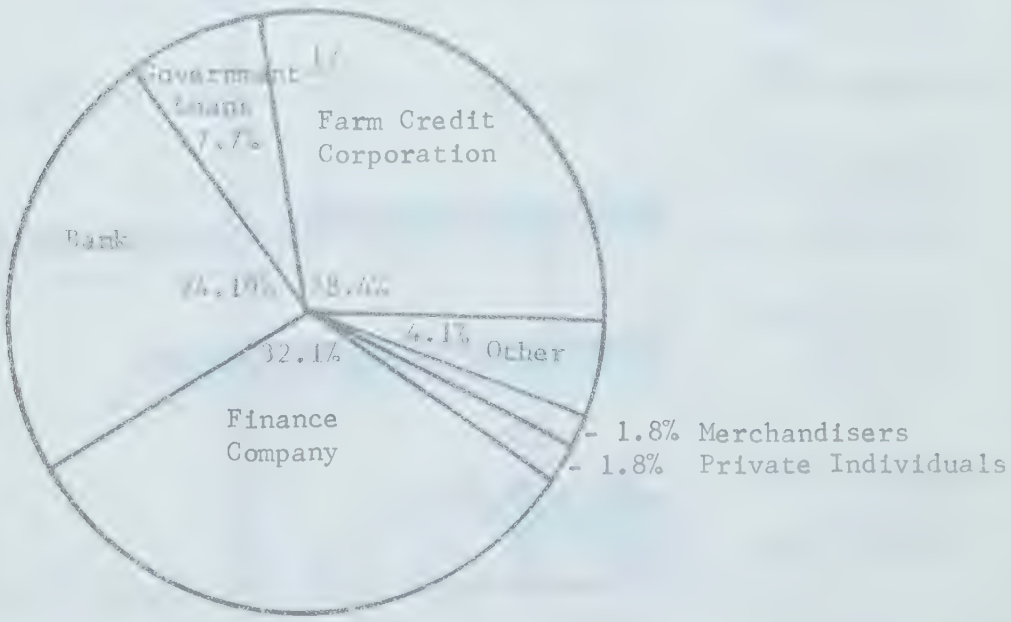
Twelve of the seventy-three farmers interviewed were free of debt while thirteen owed in excess of $10,000. The average debt per farm was $5,534. Generally it may be stated that the use of credit is minimal. Table 20 (Appendix) indicates the items for which the debt was incurred and Figure 19 depicts the main source of credit.

Loans by finance companies comprised the greatest single source of credit, followed by the Farm Credit Corporation and then by banks. In many cases, farmers did very little "shopping" for credit. Loans by finance companies were applied primarily on machinery.

Nearly 90% of the loans were for the purchase of land or machinery,

Figure 19

PER CENT OF TOTAL FARM DEBT
BY VARIOUS SOURCES OF CREDIT



Source: Table 21, Appendix

1/ Homestead Sale and V. L. A.

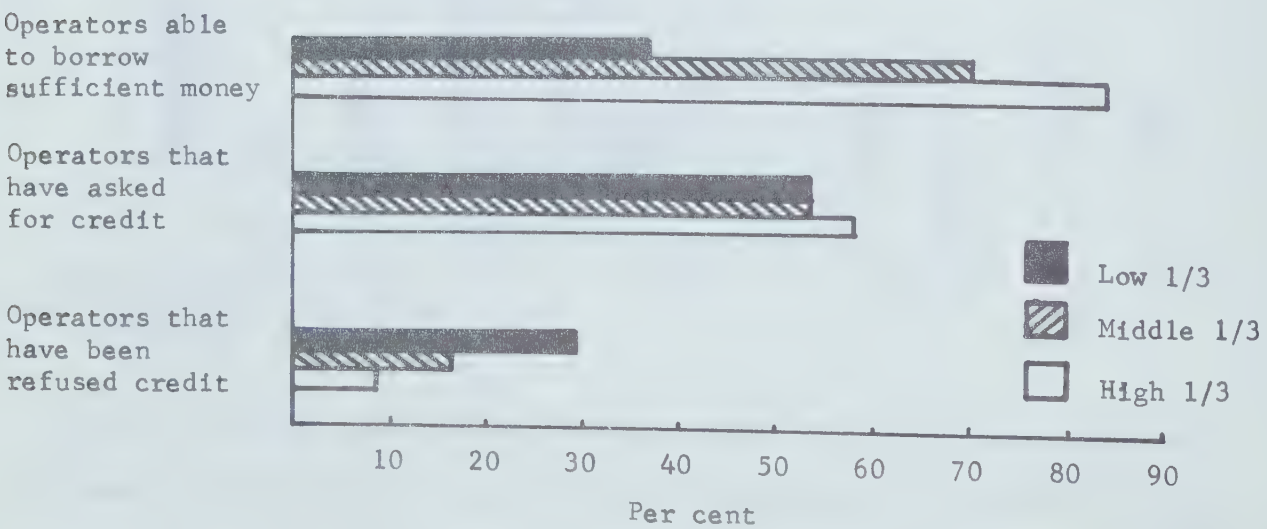
while only 2.2% was designated for the purchase of livestock. Similarly, a small percentage (only 3.5%) was borrowed for operating expenses. (See Table 20, Appendix).

Availability of Credit

The availability of credit facilities is normally greater among the higher income operators. Over 84% in this category were able to borrow all the money they needed, more than double the percentage for the lower group (37.5%). Only 8% of the higher income operators were refused credit while 29% of the lower group were refused. The middle group reported 16% of their operators having been refused credit. These statements assume more significance when it is noted that a relatively equal number of operators requested credit in each of the income groups.

Whereas the extension of greater credit privileges could do much to enhance income opportunities among farm operators by permitting increased investment, sound counselling and increased technological aid is desirable.

Figure 20 AVAILABILITY OF CREDIT AMONG FARM OPERATORS



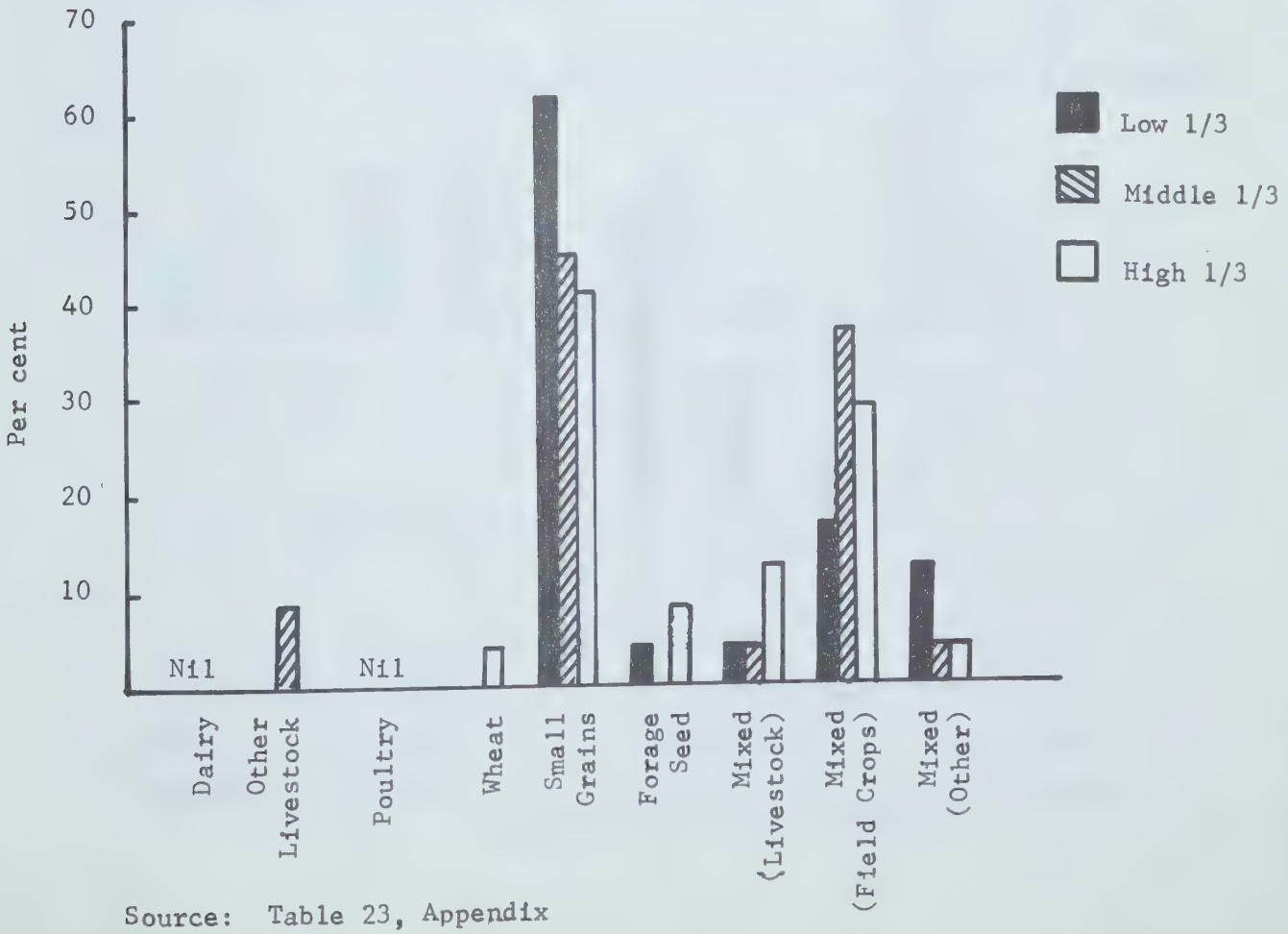
Source: Table 22, Appendix

Classification of Farms By Type

Farms were classified by type in an attempt to determine whether a certain kind of operation returned a greater gross income than another. (See Section II, Page 15 for a more detailed description of farm types).

Generally, there does not appear to be a significant indication that any type of farm is more successful than another. Field crop enterprises dominate all types of farms, with small grains (rapeseed, barley, flax and oats) prevailing. There are only two livestock farms, which makes it difficult to determine costs of production and reasons for limited livestock production. (See Figure 21).

Figure 21 CLASSIFICATION OF FARMS BY TYPE



Source: Table 23, Appendix

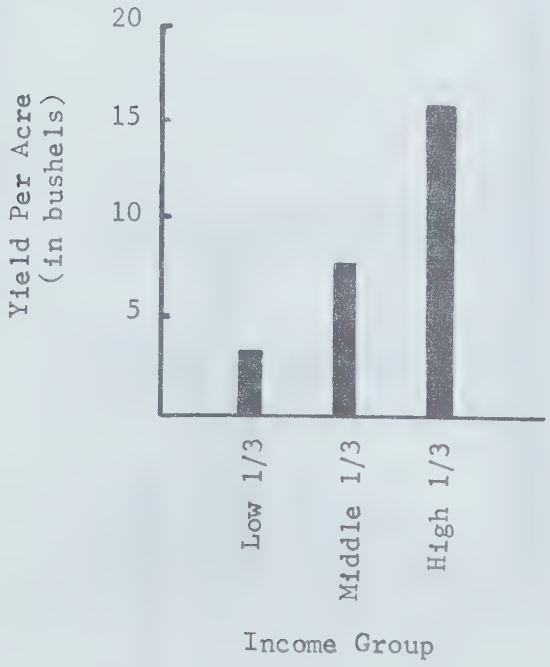
When the returns per acre were calculated, wheat was found to return the most, followed by flax, rapeseed and barley, respectively. Oats returned the least. For the crop production returns per acre, see Table 24, Appendix.

Crop Yield

When the returns per acre were examined for each level of income, one of the major differences indicated was the variation in yield. The operators in the low income group had, for instance, a wheat yield of 3.? bushels per acre, compared to 7.7 for the middle group and 15.9 bushels per acre for the larger income bracket. All crops except oats and forage for seed showed a similar trend.

Wheat returned nearly $20 per acre for all farms, followed closely by flax, rapeseed and barley. Oats and forage seed had much lower returns.

Figure 22 YIELD OF WHEAT PER ACRE IN TANGENT AREA



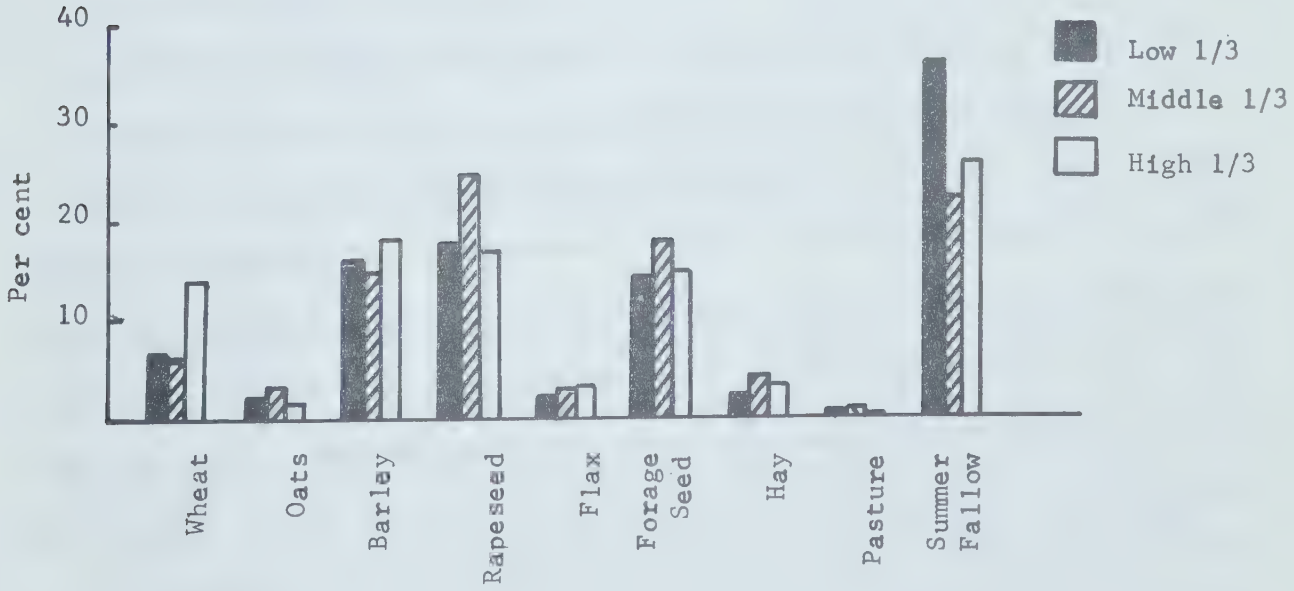
Source: Table 25, Appendix

The relative returns per acre for the area were calculated by multiplying the average yield per acre by the price received per unit sold. Because the selling price varied considerably, standard prices[1/], representative of the area, were selected.

Land Under Crops By Type

Analysis was conducted among the crop producers in each of the three income groups to determine the proportions of types of crops seeded. (See Figure 23). Except for wheat and rapeseed production there is little difference among the proportions of types of crops produced in the three

Figure 23 LAND UNDER CROPS BY TYPE OF CROPS



Source: Table 26, Appendix

1/

Wheat	$ 1.50/bu.	Flax	$ 2.75/bu.
Oats	$ 0.50/bu.	Forage Seed	$ 0.10/lb.
Barley	$ 0.85/bu.	Hay	$18.00/ton
Rapeseed	$ 2.20/bu.	Pasture	$10.00/acre

groups. In the high income group wheat almost doubles the corresponding proportions of the middle and low groups while rapeseed production is proportionally higher in the middle group. The amount of summer fallow is high for all groups, particularly the low income category. High proportions of summer fallow may be a reflection of the number of residential farmers who had small seeded acreages or were unable to harvest their crops because of adverse weather conditions. Considerable summer fallow acreage resulted from land whose crops failed to properly mature and therefore were not harvested because yields would not meet expenses.

Cereal Grain Deliveries at Tangent Elevator

The crops in the area were reported to be very poor in the crop years 1963 - 64, 1964 - 65 and 1965 - 66. In order to obtain some check on these reports, the deliveries to the Tangent elevator were obtained.1/

The Tangent elevator was selected because it was centrally located in the survey area, and consequently should reflect the cereal grain production. Changes in acreages seeded is unavailable and the years in which the grain was produced is not known. Both would obscure trends. Nevertheless, total bushels marketed at the elevator, while down in 1963 - 64, rebounded in the following years to above long term averages. Wheat and oat deliveries were down considerably from the previous two years. The highest number of annual deliveries since 1950-51 occurred in 1961-62 when they totalled 246,669 bushels. Deliveries in the 1964-65 crop year were 245,683 bushels. (See Table 27, Appendix).

Livestock Numbers

The number of farms in the Tangent Area reporting livestock were few.

1/ Northern Alberta Railway.

In the low income group, 18 operators reported having no beef cattle, 21 reported no poultry and 23 reported no dairy cattle, swine or horses. A similar number of operators in the middle and high groups reported no livestock. This is probably due to lack of capital, lack of pasture, distance to market, outdated technology and necessity of the operator to work off the farm in the winter months.

On the other hand, the area would seem favourable to livestock production since feed grains (oats and barley) are grown and 27.7% of the land is under forage production. (See Table 28, Appendix).

Gross Farm Income

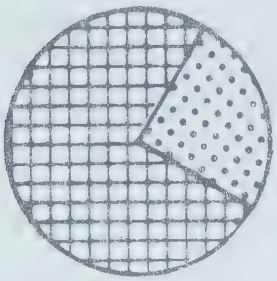
The gross farm income in 1965 for all farms in the survey area averaged $3,963. This included income from the sale of agricultural products, Wheat Board payments and Prairie Farm Assistance Act payments. Thirty-two of the seventy-two farmers interviewed had gross incomes of less than $2,500. The distribution of gross farm incomes is shown in Table 29, Appendix.

When the gross farm income of the farm operators in each of the three income groups is compared, several differences are noted. e.g., all the farmers in the low income group had gross farm incomes less than $3,750. No operators in the middle or high groups had gross farm incomes below this level. The middle group had no farmers with gross farm income in excess of $7,500 while the higher group had over 33% in this category and 12.5% with gross farm incomes in excess of $15,000. (See Figure 24).

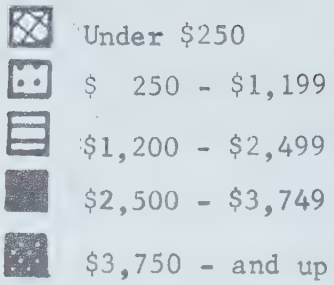
The percentage of income derived from the sale of the various commodities was similar in each of the three groups of operators. The greatest

Figure 24 DISTRIBUTION OF GROSS FARM INCOME

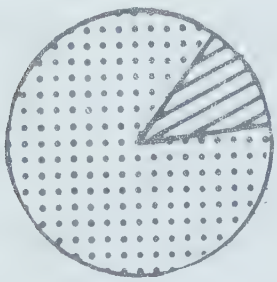
Low 1/3 of Operators



Average Gross Farm Income
$830.00

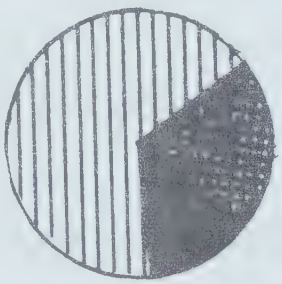


Middle 1/3 of Operators



Average Gross Farm Income
$2,932.00

High 1/3 of Operators



Average Gross Farm Income
$8,290.00

Source: Table 30, Appendix

difference, aside from transfer payments, was in the sale of livestock and livestock products. Only 9.6% of the gross income of the low income group was obtained from the sale of animal products compared to 18% in the middle group and 17.1% in the high income bracket. (See Table 31, Appendix).

Net Farm Income

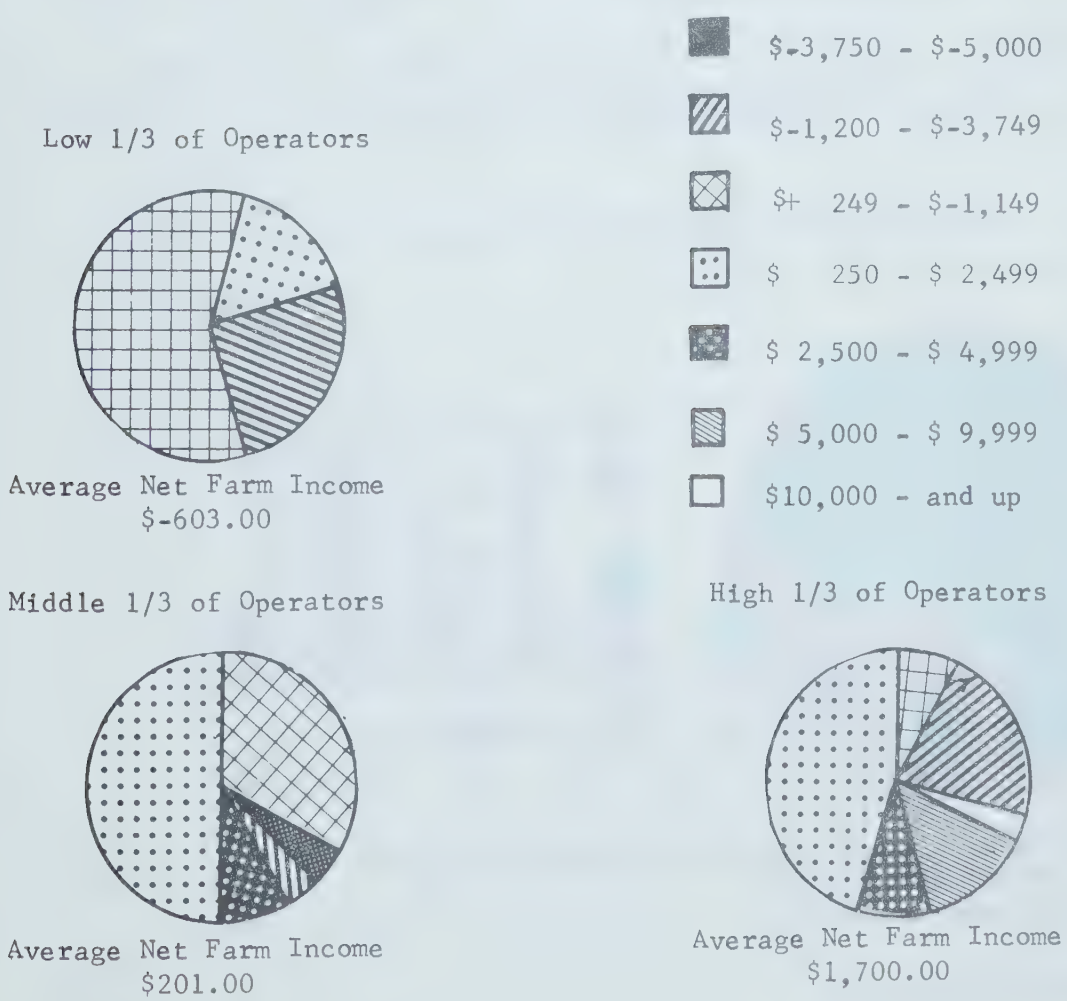
The net farm income was calculated by deducting from gross farm income the operating expenses, depreciation on buildings, machinery and equipment, taxes, hired help and interest on loans. The average depreciation on machinery and equipment amounted to $940, while the average depreciation on

buildings was $245.

The average net farm income was only $433 when costs were subtracted from gross farm income. It is recognized that this figure is abnormally low because 1965 was a disastrous crop year.

Almost half of the farmers operated at a loss in 1965 before deducting living expenses. The distribution of net farm income is shown in Table 32, Appendix.

Figure 25 DISTRIBUTION OF NET FARM INCOME



Source: Table 33, Appendix

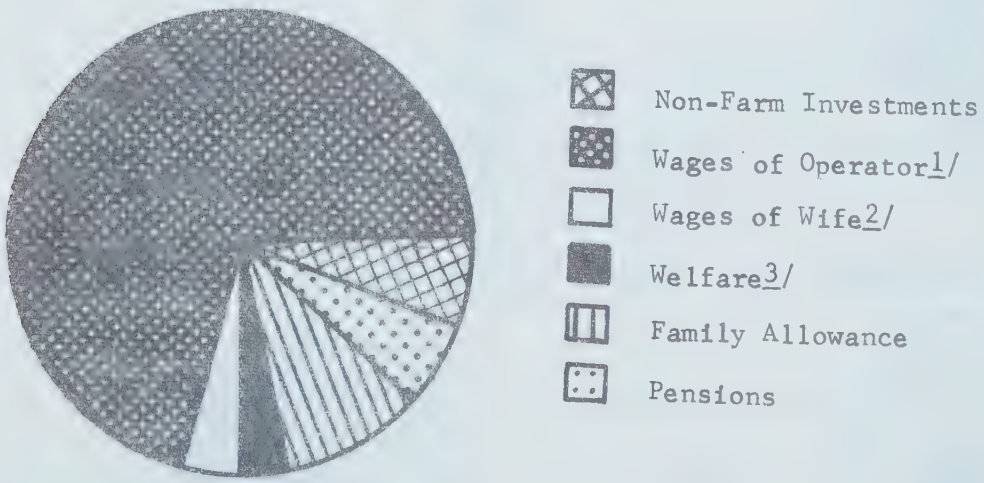
The net farm income for the low gross farm income group averaged $-603, the middle group $201 and the high group $1,700. Ideally, the net returns to the farmer should cover operating expenses, repayment of loans and provide the family with a satisfactory standard of living. If this figure was assumed to be $3,000, the high gross farm income group was the only one that approached this objective.

The distribution of net farm income varied considerably as was shown in Figure 25.

Non-Farm Income

Forty-two or 57.5% of the farm operators in the Tangent Area had earnings from non-farm sources, averaging $1,577 per respondent. Wages from off-farm employment accounted for almost three quarters of this figure while welfare, family allowance and pension payments made up most of the

Figure 26 SOURCES OF NON-FARM INCOME IN TANGENT AREA



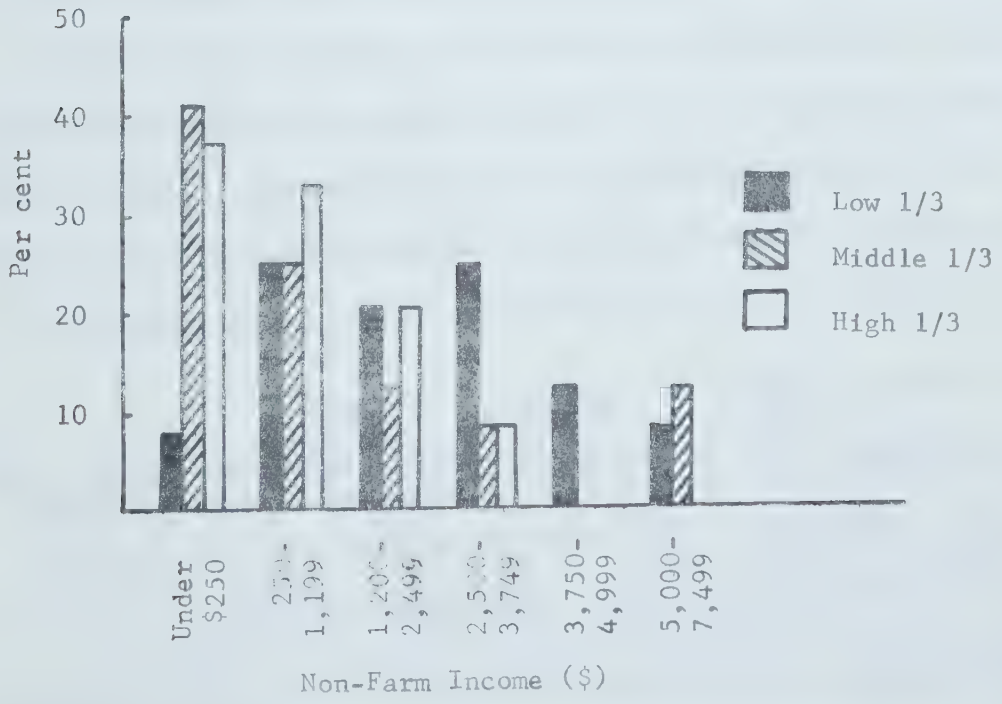
1/ 42 operators had income from off-farm wages (57.5%)
2/ 3 wives worked off the farm
3/ 4 families were on welfare

Source: Table 34, Appendix

balance. Non-farm investments amounted to very little. Figure 26 portrays the major sources of non-farm income in the survey area.

The average non-farm incomes of the low, middle and high income groups were $2,305, $1,355 and $804, respectively. This indicates that non-farm income is inversely related to gross farm income. In other words, the survey shows that as gross farm income increases there is a corresponding decrease in non-farm income. In the lower income group, 45% had non-farm incomes of $2,500 and over, compared to 20% for the middle group and only 8% for the upper one-third. Figure 27 shows the non-farm income for the levels of income.

Figure 27 DISTRIBUTION OF NON-FARM INCOME



Source: Table 35, Appendix

Family Living Income[1/]

Family Living Income represents all the sources of income that are available to the farm family for living purposes. By combining the average non-farm incomes (Table 35, Appendix) and the net farm incomes (Table 33, Appendix), the family living income for each of the three income levels is obtained. This is indicated as follows:

AVERAGE	LOW 1/3	MIDDLE 1/3	HIGH 1/3
Non-Farm Income	$2,305	$1,355	$ 804
Net Farm Income	-603	201	1,700
Family Living Income	$1,702	$1,556	$2,504

Small incomes augment the farmers' problems. The minimum level of income that would be acceptable to the average farm family varies from time to place and is therefore quite difficult to establish. Certainly farmers do not require the same cash income as urban families because of their lower rents, availability of farm-grown produce and fewer social demands. However, they still require a certain standard by which to enjoy a comfortable living. By combining the net farm and non-farm incomes, $2,500 was established as a

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1/ Four Main Sources of Family Living Income:

1. Net Farm Income - This source represents the difference between cash received from sales of produce from the farm and farm cash expense.
2. Income From Government - This source represents the casn receipts from Government sources, mainly in the form of old age pensions and family allowances or some form of Government assistance.
3. Off-Farm Income - This source includes salaries and wages earned through employment of the farmer and members of his family off the farm.
4. Other Income - This source includes any income not mentioned above, such as investment income.

minimum requirement for an adequate family living income for the farmers in the Tangent Area. On an average, only one-third of the farmers in the survey area met this standard.

Land Tenure

Respondents were asked the number of years they had operated the present farm. This was done in order to determine whether the length of time on a farm was associated with gross farm incomes. It would be reasonable to assume that the greater the length of farm tenure, the larger would be the productive resources and consequently higher incomes. This does not appear to be the case in the Tangent Area.

Table 36 indicates that 60% of the farmers have operated the present farms for less than 15 years, whereas 16.0% have been on their farms for 35 years or more. The latter group includes the early pioneers.

When the farmers' gross farm incomes are compared with their utilization of agricultural extension services, there were interesting results. For example, the number of times that a farmer visited the District Agriculturist's office (minimum of once a year) was requested. The results are as follows:

LOW 1/3		MIDDLE 1/3		HIGH 1/3	
#	%	#	%	#	%
8	33.3	10	41.7	17	70.8

The preceding chart indicates that only one-third of the low income group visited the D. A.'s office at least once a year compared to over two-thirds for the higher income group. The same proportions hold true for other extension services as well. This indicates that either there is

public apathy towards these services or they are not being supplied. Perhaps the fact that the D. A.'s office is sixty miles distance from the area is a partial explanation. The percentage spread among the three income levels would indicate that social and economic problems are the reasons for the differences.

B. SOCIO-ECONOMIC CHARACTERISTICS

1. POPULATION CHARACTERISTICS

According to the 1961 Census of Canada, there were 812 people living in the Tangent Area. Included in this total are the hamlets of Tangent (population 92) and a portion of Eaglesham[1/] (population 112). Since there are no centers in excess of 1,000 population, the entire area is classified as rural. Of the rural population, 67% live on the farm; 58% of the farm residents being male.

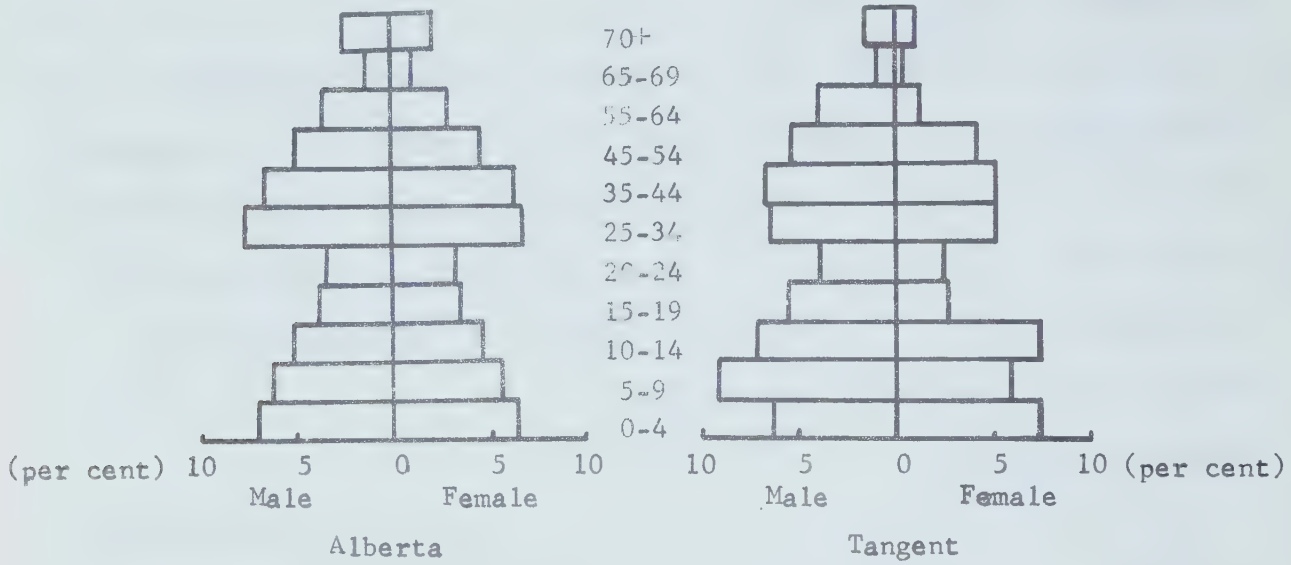
Age-Sex Distribution

There are more men than women in the area with 56.2% of the population being male and 43.8% female. A total of 43.1% of the population is under the age of 15 (compared to 35.5% in Alberta). This indicates that a very high proportion of the population is in the dependent age groups.

Population figures show that 14.8% of the population is between 15 and 24 years, which compares with Alberta's 14.1%. However, the composition of this age group differs. In Alberta there are almost equal proportions of male and female, but in the Tangent Area there are almost twice as many males as there are females, (66% males and 34% females). This seems to indicate that young women tend to migrate more readily than young males. It is also interesting to note that most of the young women who remain in the area who are past the age of 14 are married. There are only 33 single women over the age of 14 as compared to 127 single men. (See Figure 28).

1/ The western boundary of the Tangent Area passes through a portion of Eaglesham.

Figure 28 AGE-SEX DISTRIBUTION FOR ALBERTA AND TANGENT AREA



Source: Tables 37, 38 (Appendix)

Education of Farm Operators

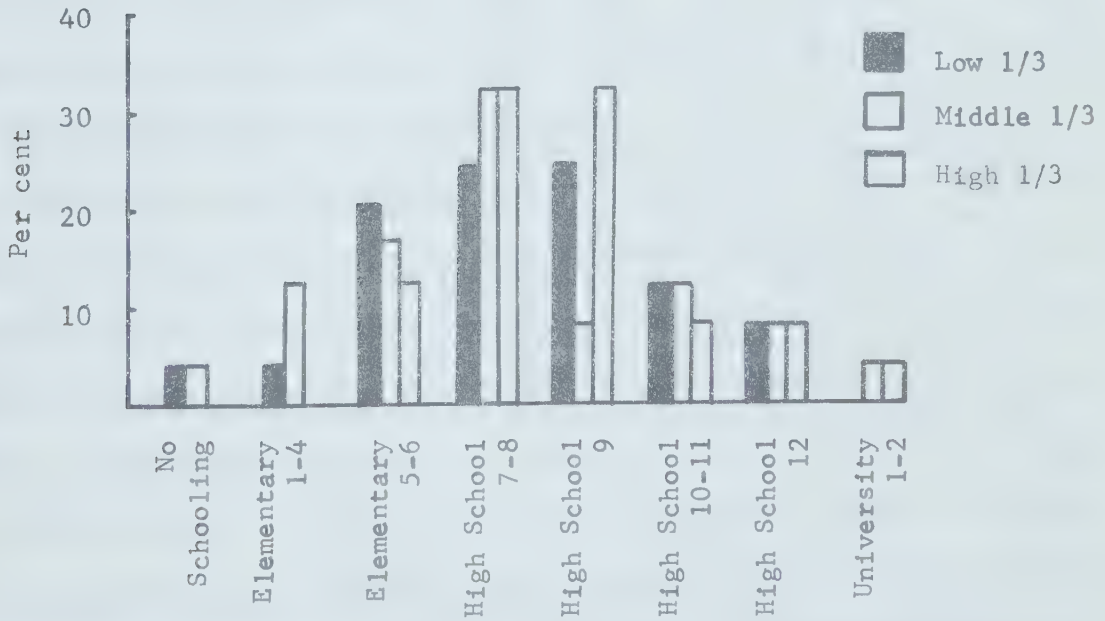
Education often has an effect upon the management skills which a farmer possesses. Thus, it is assumed that the higher income farmers would also have a higher average education. In the Tangent Area however, this relationship does not seem to be very direct. The average years of schooling of those in the low income group is 7.6 years, in the middle income group 6.8 years and in the high income group 8.6 years. On the average, the high income group has more education than the remaining groups. However, the middle, not the lower group, has the least amount of schooling. One reason why the average education of the lower group appears unusually high is that, generally, the younger the person the more the years of schooling. The low income group has the lowest average age of operators among the three groups.

The average age of operators in the lowest income group is 40.7 years

while the average age in the middle income group is 43.2. The low income group has nine farm operators under thirty years of age while the middle income group has only four in this category. This difference in age between the groups may explain (at least partially) the divergence from the expected trend in education and income. (See Figure 27).

English is the language spoken by most people in the area with 87% of the population speaking the English tongue. There are 40.3% of the people who speak only English, 12.0% who speak only French and 46.7% who speak both English and French. Only one person speaks neither English nor French.

Figure 29 LEVEL OF EDUCATION OF FARM OPERATORS



Source: Table 39, Appendix

2. SOCIAL CHARACTERISTICS

One of the objectives of this report is to provide information to be used by the local people for alternatives which may be open to them to

collectively or individually improve their income level. In most communities there is a basic desire to fully know and utilize available resources which can enhance the standards of living of all residents.

In this section, the material well-being and the social and economic aspirations of the people are analyzed. Several of the measures used are cross-classified according to their gross farm income level (high, middle or low). These include such scales as level of living and level of technology. Less extensive summaries are given for other characteristics.

Family Living (Socio-Economic Status)

An attempt was made to obtain some measure of the socio-economic status of the farmers in the survey area. A scale[1/] was used which measured items which could be classified under the headings of material possessions, cultural possessions and social participation—items mostly related to home and living conditions. When the respondents were classified according to the three gross farm income categories, their average scores were 71, 65.4 and 56 for the high, middle and low groups, respectively (Maximum score - 97). This indicates the higher the gross farm income, the higher the socio-economic status. However, as indicated in Section II, those having the lowest average gross farm income had the highest average non-farm income, possibly indicating that off-farm income is not expended for items enhancing their socio-economic status.

Community Involvement[1/] (Social Participation)

All respondents were requested to indicate their membership in com-

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1/ Sewells short form of the Farm Socio-Economic Status Scale.

2/ Delbert C. Miller, Handbook of Research Design and Social Measurement. New York. 1964. p. 208-212.

munity organizations. Memberships, regularity of attendance and offices held were requested. According to Chapin's Scale, the higher score the more extensive the involvement and participation of the respondents. Scores[1/] for the upper, middle and low income groups were, respectively, 10.9, 7.1 and 3.5, indicating the greater the gross farm income the greater the likelihood of community involvement.

People in the low income group are far less likely to be involved with community organizations than the people in the higher income groups. Illustrating, almost 50% of the respondents in the lower group had no activities listed for the various organizations, compared to only 5% in the higher groups. Group affiliations, on the whole, were primarily with church and farm auxiliaries. War veterans were also well organized.

Community action processes involving all the people is an important function of the rural development program. One of the general objectives of the program is to improve the individuals who experience the less than acceptable standards. These individuals are generally those in the lower income groups—one-half of whom listed no affiliation. One of the keys to the success of the program is to successfully involve these individuals in community affairs.

1/ Mean scores for occupational groups are as follows:

I. Professional and II. Managerial and Proprietary (20)
III. Clerical (16)
IV. Skilled (12)
V. Semi-skilled (8)
VI. Unskilled (4)

Technological Level

The incorporation of current farming practices in the farmers operation should, by the more efficient use of resources, reflect favourably on income levels. The use of recommended farming practices measures at least two things, a) management skills and ability and b) the farmer's attitude toward changing his farming methods.

The questionnaire listed several up-to-date farming techniques such as the use of systemic sprays, dehorning practices, cleaning and treating seed grain, etc. Numerical values were assigned to the farmers' adoption or non-adoption of each listed farming practise. With the maximum obtainable score being 20, the respective averages were 7.0, 9.5 and 11.7 for the lower, middle and upper income groups. From this data, it is evident that the incorporation of modern farming practices correlates with higher incomes. However, on the whole, technological levels are low, with the higher income group averaging little more than 50% of the recommended practices and the other groups less. In order that farm income opportunities be enhanced, it is obvious that all groups could incorporate more recommended practices to their advantage. Although this would require greater investment, a greater return is almost assured.

An attitude related to the use of recommended farming practices is the attitude toward acceptance of new farming practices. Two questions were asked which concerned whether or not a person thought that the older established ways of farming were best and whether a person should try a recommended farming innovation or wait and see how the method worked on his neighbour's farm. The average score for those in the high group was

3.5, the middle group 3.4 and the low group 3.1. This is a trend that could be expected from the actual use of recommended farming methods as discussed above. Most of the respondents thought that the old, established methods were not necessarily the best but that they should wait and see what happened on their neighbour's farm before trying a new practice on their own farm.

Aspiration Level

An effort was made in the study to determine whether there was a real desire on the part of the respondents to improve their standard of living and to what lengths they would go to achieve this result. In this particular instance, a hypothetical question asking whether they would be willing to undertake alternative solutions to make more money was asked. Some of the solutions included leaving the community, giving up spare time, changing the type of operations, etc. The maximum score was 14. Average results for the income groups for the high, middle and low groups were 9.4, 9.9 and 8.8, respectively. From the figure it seems apparent that the low income group indicated less incentive towards aspiring to improved incomes. The higher group, represented by mostly successful farm operators, showed a slightly higher aspiration level and expressed satisfaction with their present status. The fact that the middle group recorded the highest score is reflected in the traditional middle class value system characterized by a relatively constant effort to improve their position in life.

The chart on the following page summarizes the social characteristics discussed thus far:

	LOW 1/3	MIDDLE 1/3	HIGH 1/3
Socio-Economic Status	56.0	65.4	71.0
Social Participation	3.5	7.4	10.9
Technological Level	7.0	9.5	11.7
Aspiration Level	8.8	9.9	9.4

Anomie

Change is a characteristic of modern society. Man's biological, cultural and social environment is in a state of near constant transition. When he is not able to make adjustments to change and when society lacks well defined norms to govern his behaviour, he often reacts adversely. He experiences frustrations with his way of life and feels alienated or apart from society. Anomie describes this condition resulting from his inability to cope with the changes about him.

Using Sroles Scale, an attempt was made to measure anomie in the Tangent Area. Findings of the test are summarized in the following chart:

		LOW 1/3		MIDDLE 1/3		HIGH 1/3	
Key to Attitudes	Scale Value	Operators #	%	Operators #	%	Operators #	%
Anomic, Depressed	23-24	1	4.2	2	8.3	0	0.0
Anxiety, Insecurity, Pessimism	19-22	8	33.3	8	33.3	5	20.8
No Opinion	18	4	16.7	5	20.9	3	12.5
Social System Generally Acceptable	14-17	8	33.3	5	20.9	14	58.3
Envir nmentally Adjusted	12-13	1	4.2	2	8.3	1	4.2
Not Scored		2	8.3	2	8.3	1	4.2
TOTAL		24	100.0	24	100.0	24	100.0

Interpreting the preceding data, it is found that when scores of 18 and over (general anomie) are noted in each of the income groups, there are double the respondents in both the lower and middle groups in comparison with the upper group. When scores of 17 and under, which indicate general satisfactions with present conditions, are noted in the groups, there are almost twice the respondents in the upper one-third compared to either the middle or the low income groups. Both findings are indicative of a demonstrated relationship between low income and anomie in the Tangent Area. Whether this condition is the result of frustrations experienced with income, education or occupation, it is important to realize that through rural development programs, steps can be taken to irradicate this condition.

Although only four of the respondents interviewed were on welfare, three of them were in the low income group.

Non-Farm Employment Interests

The respondents were asked to indicate whether or not they would be interested in taking a permanent non-farm job if the opportunity arose. A total of nineteen (27.5%) said they would be interested. Of these 19 farm operators, nine were in the low income group, six in the middle income group and four in the high income group. The average education of the nine in the low income group was 8.3 years (slightly higher than the average for all those in the low income group) and five of them had less than a grade nine education. The average age of the nine farmers was 43.4 years—five of whom were over fifty years of age. The middle income group had six farm operators interested in non-farm employment—four had less than nine years of schooling and one was over fifty years of age. The average schooling was 8.3 years (the same as the average in the other two

groups) and the average age was 41.7 years (slightly younger than the other two groups). The average age of those in the high income group was 47.3 years and the average education was again 8.3 years. It is interesting to note that approximately 27% of the respondents were interested in permanent non-farm employment. However, their level of education usually does not fit them for any skilled employment and often their age will hinder them from taking further training.

The characteristics of farm operators interested in permanent non-farm employment is summarized in the following chart:

	LOW 1/3	MIDDLE 1/3	HIGH 1/3
Number With Less Than 9 Years of Schooling	5	4	2
Average Schooling In Years	8	8	8
Number Over 50 Years of Age	5	1	1
Average Age In Years	43	42	47
Total Number Interested	9	6	4
Per Cent of Total In Group Interested	39	26	17

Local Problems

The respondents were requested to list, in order of importance, major problems which affected their livelihood. Bad weather (drought, flood, premature frost) was rated by almost all as the worst single problem. This was followed in order by poor soil, drainage problems, high price of machinery, distant markets for farm produce, lack of capital, low grain prices and poor road maintainance. Mention was also made of poor off-farm employment opportunity, lack of ample government assistance, cost-price squeeze,

insufficient broken land, etc.

Inadequate housing, farm buildings, and amenities are problems to most of those interviewed. Very few have telephones, inside plumbing, sewer systems or central heating. The nearest hospital and doctor's offices are at Spirit River, 55 miles from Tangent. Dental services are located at Fairview or Grande Prairie, 80 and 95 miles distance, respectively, from the survey area. The closest service centers are Spirit River and Fahler (25 miles). Therefore, the obtaining of major goods and services poses a major transportation problem to residents of the area. Marketing is a problem because of the preceding and geographical limitations (relatively isolated location between the Peace and Smoky Rivers).

A P P E N D I X

STATISTICAL ANALYSIS

Correlation Analysis

This is used to determine the degree of association or dependence of one factor on another factor. From the analysis, a value of r (correlation coefficient) is calculated. The range of r is from -1.0 to +1.0; the higher the r value, the closer the relationship between the two factors. For example, if one were interested in determining reasons for the number of automobile accidents on a given highway and used speed of the automobile as the independent variable (x) and number of automobile accidents as the dependent variable (y), the degree of association between the two variables could be measured. Suppose that the calculated r value (correlation coefficient) was .95; this, being very close to +1.0 and being positive, would indicate a very close relationship between the two variables. This can be interpreted to mean that the frequency of automobile accidents is very much dependent on car speed and therefore increases as automobile speed increases.

A series of simple correlations were run to determine the effect of certain factors on gross farm income. The variables used were: gross farm income (as the dependent variable, y) and livestock income, farm size, time on present farm, anomie level, management level and socio-economic level (as the independent variable, x). Net farm income was also used as a dependent variable and correlated with farm size and management level. Net worth was correlated with total liabilities later in the analysis. Table 17 shows the results of the correlation analysis.

SIMPLE CORRELATION COEFFICIENTS

	Independent Variables (X)	No. of Observations (n)	Correlation Coefficients (r)
Gross Farm Income	Livestock Income	73	0.94**
" " "	Farm Size (Total Acres)	73	0.70**
" " "	Time on Present Farm (yrs)	73	-0.11^{NS}
" " "	Anomia Level	67	-0.20^{NS}
" " "	Management Level	73	0.44**
" " "	Socio-economic Level	67	0.31*
Net Farm Income	Livestock Income	73	0.12^{NS}
" " "	Farm Size (Total Acres)	73	0.24*
" " "	Management Level	73	0.17^{NS}
Net Worth	Liabilities	73	0.44**

** Significant at the 1% level (tabular r with 71 degrees of freedom = .302)

* Significant at the 5% level (tabular r with 71 degrees of freedom = .232), (tabular r with 71 degrees of freedom = .249)

NS Not significant at either the 1 or 5% levels of significance.

NOTE: The 1% level of significance means that there is one chance in one-hundred of committing an error.
The 5% level of significance means that there are five chances in one-hundred of committing an error.

All of the variables tested with gross farm income were found to be significant except time on present farm and anomie level which both showed negative correlation coefficients. This means that the longer the man has been on the farm and the higher the anomie level, the lower the gross farm income. This is a reasonable conclusion in the case of anomie level, because

the higher anomie values suggest a negative lack of initiative attitude. However, the time on present farm variable is difficult to explain; one would expect that the longer the time on the farm the greater the gross farm income.

The correlation coefficient for income with livestock income was very high. This is to be expected since gross farm income is partially composed of livestock income; as livestock income increases, gross farm income also increases.

The farm size variable was highly significant and suggests that the larger the size of farm the greater the gross farm income, which is a reasonable conclusion and what one would expect with reasonably good management, other things being equal.

Management level was also highly significant. The greater the management ability as measured by use of modern methods and technology and advice of trained personel etc., the greater the gross farm income.

Socio-economic level variable was significant but difficult to explain since the amount of money taken in as farm income is not directly dependent upon the level of living of the family. In fact, if anything, the reverse should be the case. It is logical to assume that the larger the gross farm income, the higher the standard of family living.

None of the correlations using net farm income as the dependent variable were significant except the farm size variable. Here again, it is expected that with good management, the larger the scale of operation the higher the net farm income. It is somewhat surprising that the other two variables,

livestock income and management level were not significant, since one would normally expect that net farm income would depend to some extent on these factors.

Net worth correlated with liabilities (in the form of money borrowed from lending institutions) was highly significant. This indicates that the more money borrowed, the greater the ability to expand the scale of operation, hence the greater the net worth.

A word of caution should probably be mentioned with respect to the simple correlation analysis. There are probably many variables acting simultaneously which influence gross farm income or net farm income etc., therefore, the simple correlations, taking only one of the variables at a time which may influence gross farm income probably does not give an entirely accurate picture. It does, however, give some indication about the influence which individual variables have on the dependent factor.

Analysis of Variance

The analysis of variance is used to determine whether or not there are significant differences between means (average) when more than two means are being compared. The analysis of variance was used in this study to determine whether or not there was a significant difference in the gross farm income produced on farms in various soil rating zones. The soil zones tested were poor to fair arable; fair to fairly good arable; fairly good to good arable; good to very good arable.[1/] Table 18, Appendix, shows the results of the analysis.

1/ See soil map on page 24 to determine what areas are included in each soil zone.

ANALYSIS OF VARIANCE (CRD) BY SOIL RATING ZONES

Source of Variation	Degree of Freedom	Sum of Squares	Mean Square	F
Among - sample	3	19,037,329	6,345,776	.458[a/]
Within - sample	67	928,042,333	13,851,378	
TOTAL	70	947,079,662		

a/ Tabular F values at the 5% confidence level with a two tailed test were .3626 and 2.7581 with 3 and 67 degrees of freedom.

The calculated value of F, .458, was not significant, indicating that there was no difference in gross farm income produced on the farms in the various soil types.

There were only four farms in the poor to fair arable soil zone and five farms in the fair to fairly good arable soil zone. A test was performed as a check on the reliability of the results of the analysis of variance to see if there was a difference between the means of the fairly good to good arable and good to very good arable soil zones. There were a large number of farms in both of these soil zones; however, there was no significant difference in the gross farm incomes produced on farms in the two soil rating zones. The calculated value of 1.081 compared to the tabular t value of t 2.064 at the 5% confidence level. The calculated t value is significant at the 50% confidence level.

1. Census of Canada 1961, 5.3 - 3.
2. Tangent Farm Survey, Rural Development Research Branch, Economics Division, Alberta Department of Agriculture, April 1966.
3. Census of Canada 1961, Bulletin 1.2 - 2.

* There were actually 73 farm operators interviewed. The total was reduced to 72 because the eliminated respondent; summer-fallowed all his land, did not have any livestock or farm income and worked off the farm for over 6 months.

Table 1

AVERAGE FARM SIZE AND LAND USE BY ACREAGE

Land Use	ALBERTA		E. D. 132		C. D. 15		SURVEY AREA	
	Acres Per Farm	%	Acres Per Farm	%	Acres Per Farm	%	Acres Per Farm	%
Improved Land	345	53.5	329	59.6	283	58.4	363	62.4
Crops	213	33.1	248	44.9	202	41.7	261	44.8
Summer Fallow	102	15.8	58	10.7	62	12.8	100	17.2
Pasture	23	3.5	16	2.8	12	2.5	2	0.4
Other	7	1.1	7	1.2	7	1.4	0	0.0
Unimproved Land	300	46.5	223	40.4	202	41.6	218	37.6
TOTAL	645	100.0	552	100.0	485	100.0	581	100.0
Land Owned	437	67.8	397	71.9	362	74.6	513	88.3
Land Rented	208	25.4	155	28.1	123	25.4	68	11.7

Source: 1,2

Table 2 FARM SIZE AND DISTRIBUTION BY ACREAGE

Class (Acres)	ALBERTA %	I.D. 132 %	C.D. 15 %	SURVEY AREA %	SURVEY AREA No. of Farms
Under 70	3.7	0.3	1.9	0.0	0
70 - 239	21.1	13.1	17.4	9.6	7
240 - 399	26.5	36.2	32.7	26.0	19
400 - 559	16.1	17.1	18.7	16.4	12
560 - 759	11.5	15.2	13.6	23.3	17
760 - 1,199	10.2	11.3	10.5	19.2	14
1,200 and over	10.9	6.8	5.2	5.5	4
TOTAL	100.0	100.0	100.0	100.0	73*

Source: 1,2

Table 3 TENURE OF OPERATORS

Tenure	ALBERTA %	SURVEY AREA %	SURVEY AREA No. of Operators
Owners	59.2	78.1	57
Part owners, part tenant	31.0	20.5	15
Tenants	9.2	1.4	1
Managers	0.6	0.0	0
TOTAL	100.0	100.0	73*

Source: 1,2

Table 4 AVERAGE CAPITAL VALUE PER FARM

Capital Value	ALBERTA	C.D. 15	SURVEY AREA
Total	$37,118	$21,226	$33,913
Land And Buildings	23,430	12,747	23,013
Machinery And Equipment	7,524	6,343	9,392
Livestock And Poultry	6,164	2,134	1,508

Source: 1,2

Table 5 AVERAGE CAPITAL VALUE PER ACRE

Capital Value	ALBERTA	C.D. 15	SURVEY AREA**
Total	$57.60	$43.78	$66.10
Land And Buildings	36.30	26.30	44.86
Machinery And Equipment	11.70	13.08	18.30
Livestock And Poultry	9.60	4.40	2.94

** Based on total owned acres.

Source: 1,2

Table 6 FARMS BY CAPITAL INVESTED PER FARM

Capital Invested	ALBERTA %	C.D. 15 %	SURVEY AREA %	SURVEY AREA No. of Farms
Under $1,950	0.5	1.3	1.4	1
$ 1,950 - 2,949	0.8	1.8	1.4	1
2,950 - 3,949	1.2	2.4	1.4	1
3,950 - 4,949	1.5	3.0	1.4	1
4,950 - 7,949	4.8	9.1	1.4	1
7,950 - 9,949	5.6	9.2	2.7	2
9,950 - 14,949	12.3	17.9	11.0	8
14,950 - 24,949	22.3	25.6	23.2	17
24,950 - 49,949	30.1	23.4	32.9	24
49,950 and up	20.9	6.3	23.2	17
TOTAL	100.0	100.0	100.0	73*
AVERAGE PER FARM	$37,121	$21,226	$34,805 1/	

Capital Items	Per cent of Total Capital Invested		
Land & buildings	63.1	60.1	66.1
Machinery	20.3	29.9	27.0
Livestock	16.6	10.0	4.3
Other 2/			2.6
TOTAL	100.0	100.0	100.0

Source: 1,2

1/ In the survey area, includes non-farm investments.

2/ In the survey area, other = non-farm investments.

Note: Table I indicates total capital investment including non-farm investments of the operators (in the survey area). This item was classified as "other". The average value of the non-farm investments per operator was $892, or 2.6% of the total capital investment.

Table 7 CLASSIFICATION OF COMMERCIAL FARMS BY TYPE

Type of Farm	ALBERTA %	C.D. 15 %	SURVEY AREA %	No. of Farms
Dairy	4.5	1.1	0.0	0
Other Livestock	40.6	20.0	4.1	3
Poultry	1.1	0.4	0.0	0
Wheat	20.5	21.1	1.4	1
Small Grains	15.5	41.5	49.3	36
Miscellaneous Specialty	0.6	1.4	4.1	3
Mixed	17.2	14.5	41.1	30
Livestock	10.0	2.9	6.9	5
Field Crops	3.5	7.3	27.4	20
Other	3.7	4.3	6.8	5
TOTAL	100.0	100.0	100.0	73*

Source: 1,2

Table 8 PER CENT OF IMPROVED LAND UNDER CROPS

Type of Crop	ALBERTA %	I.D. 132 %	C.D. 15 %	SURVEY AREA %
Wheat	37	22.2	21.6	14.5
Oats	17	7.4	15.0	3.4
Barley	19	21.3	24.8	23.6
Mixed Grain	2	0.5	0.8	0.0
Forage Crops	16	23.5	23.0	27.7
Oats for Hay	3	0.9	1.7	0.0
Rapeseed	0	17.1	7.9	26.6
Other	6	7.1	5.2	4.2
TOTAL	100	100.0	100.0	100.0

Source: 1,2

Table 9

LIVESTOCK PER FARM

Livestock	ALBERTA	C. D. 15		I. D. 132		SURVEY AREA	
	No. Per 100 Acres Farm Land	Number	No. Per 100 Acres Farm Land	Number	No. Per 100 Acres Farm Land	Number	No. Per 100 Acres Farm Land
Milk Cows	0.61	13,343	0.307	445	0.257	18	0.042
Other Cattle	5.48	102,835	-	-	-	-	-
Sheep	1.05	20,071	0.462	5,442	1.586	763	1.799
Horses	0.24	8,809	0.203	433	0.179	37	0.087
Pigs	3.10	114,497	2.637	6,741	1.955	162	0.382
Hens & Chickens	19.50	522,392	12.033	24,156	6.973	1,548	3.651

Source: 1,2

Table 10 PERCENTAGE INCOME FROM SALE OF PRINCIPLE FARM PRODUCTS

Product	ALBERTA %	C.D. 15 %	SURVEY AREA %
Cattle	36.0	15.0	13.0
Hogs	11.2	11.4	4.9
Sheep	0.8	0.4	0.0
Poultry And Eggs	3.1	1.1	0.5
Dairy Products	6.8	2.7	0.9
Wheat	22.8	31.0	13.9
Other Grains	8.9	24.6	49.9
Hay	1.1	6.4	0.0
Root Crops	1.9	0.3	0.0
Other 1/	7.4	7.1	16.9
TOTAL	100.0	100.0	100.0

Source: 1,2

1/ In survey area, includes forage seed, honey , and horses.

Table 11 AGE OF FARM OPERATORS

Age Group	ALBERTA %	C.D. 15 %	SURVEY AREA 1/ %	SURVEY AREA 1/ No. of Operators
Under 25	3.2	4.3	5.5	4
25 - 34	16.2	18.1	28.8	21
35 - 44	25.5	24.4	23.3	17
45 - 54	25.6	23.5	16.4	12
55 - 59	11.5	11.7	16.4	12
60 - 64	8.3	8.9	5.5	4
65 - 69	5.1	5.1	2.7	2
70 and over	4.6	4.0	1.4	1
TOTAL	100.0	100.0	100.0	73*

Source: 1,2

1/ 17 operators (23.3%) are single.

Table 12 GROSS FARM INCOME BY SOIL RATING [1/]

Gross Farm Income	P-W No. of Farms	P-W %	4 No. of Farms	4 %	5 No. of Farms	5 %	6 No. of Farms	6 %	TOTAL No. of Farms	TOTAL %
Under $250	0	0.0	0	0.0	1	1.4	2	2.8	3	4.2
$ 250 - 1,199	1	1.4	1	1.4	3	4.2	10	14.1	15	21.1
1,200 - 2,499	0	0.0	2	2.8	2	2.8	7	9.9	11	15.5
2,500 - 3,749	0	0.0	0	0.0	4	5.7	10	14.1	14	19.8
3,750 - 4,999	0	0.0	1	1.4	2	2.8	7	9.9	10	14.1
5,000 - 7,499	2	2.8	1	1.4	3	4.2	4	5.9	10	14.1
7,500 - 9,999	0	0.0	0	0.0	2	2.8	1	1.4	3	4.2
10,000 - 14,999	1	1.4	0	0.0	1	1.4	1	1.4	3	4.2
15,000 - 19,999	0	0.0	0	0.0	0	0.0	1	1.4	1	1.4
20,000 and up	0	0.0	0	0.0	1	1.4	0	0.0	1	1.4
TOTAL	4	5.6	5	7.0	19	26.7	43	60.7	71 [2/]	100.0
AVERAGE GROSS INCOME PER SOIL TYPE	$5,096		$3,332		$4,416		$3,035			

Source: 2

1/ Legend: P-W -Pasture and Woodland
4 -Poor to Fair Arable
5 -Fair to Fairly Good Arable
6 -Fairly Good to Good Arable

2/ A soil rating was obtained for only 71 out of 72 farms.

Table 13 AVERAGE LAND USE BY ACREAGE

1965

Land Use	LOW 1/3 Acres	MIDDLE 1/3 Acres	HIGH 1/3 Acres
Improved	204	310	577
Crops	129	235	426
Summer Fallow	74	70	150
Pasture	1	5	1
Unimproved	196	178	270
Could be Improved	174	164	224
Waste	22	14	46
Total	400	488	847

Source: 2

Table 14 FARM SIZE AND DISTRIBUTION BY PERCENTAGE

Farm Size Class (Acres)	LOW 1/3	MIDDLE 1/3	HIGH 1/3
Under 70	0.0%	0.0%	0.0%
70 - 239	16.7%	12.5%	0.0%
240 - 399	41.6%	33.3%	4.2%
400 - 559	16.7%	16.7%	16.7%
560 - 759	25.0%	20.8%	20.8%
760 - 1119	0.0%	16.7%	37.5%
1200 and over	0.0%	0.0%	20.8%
TOTAL	100.0%	100.0%	100.0%
AVERAGE SIZE OF FARM	400	488	847

Source: 2

Table 15 FARMS BY CAPITAL INVESTED PER FARM

Total Assets	LOW 1/3 No. of Farms	LOW 1/3 %	MIDDLE 1/3 No. of Farms	MIDDLE 1/3 %	HIGH 1/3 No. of Farms	HIGH 1/3 %
Under $1,950	1	4.2	0	0.0	0	0.0
$ 1,950 - 2,949	0	0.0	1	4.2	0	0.0
2,950 - 3,949	1	4.2	0	0.0	0	0.0
3,950 - 4,949	1	4.2	0	0.0	0	0.0
4,950 - 7,949	1	4.2	0	0.0	0	0.0
7,950 - 9,949	2	8.3	0	0.0	0	0.0
9,950 - 14,949	5	20.8	3	12.5	0	0.0
14,950 - 24,949	10	41.6	6	25.0	1	4.2
24,950 - 49,949	3	12.5	10	41.6	10	41.6
49,950 - and up	0	0.0	4	16.7	13	54.2
TOTALS	24	100.0	24	100.0	24	100.0
TOTAL FARM CAPITAL INVESTED	$16,448.00		$31,119.00		$56,222.00	

Source: 2

Table 16 VALUE OF ASSETS WHEN FARM WAS PURCHASED

Value	LOW 1/3 No. of Operators	LOW 1/3 %	MIDDLE 1/3 No. of Operators	MIDDLE 1/3 %	HIGH 1/3 No. of Operators	HIGH 1/3 %
None	9	37.5	2	8.3	11	45.7
$ 1 - 999	5	20.8	6	25.0	3	12.5
1,000 - 1,999	5	20.8	4	16.7	1	4.2
2,000 - 2,999	0	0.0	1	4.2	4	16.7
3,000 - 3,999	2	8.3	1	4.2	0	0.0
4,000 - 4,999	1	4.2	3	12.5	3	12.5
5,000 - 5,999	1	4.2	1	4.2	1	4.2
6,000 - 6,999	0	0.0	0	0.0	0	0.0
7,000 - 7,999	0	0.0	2	8.3	0	0.0
8,000 - 8,999	1	4.2	2	8.3	0	0.0
9,000 - 9,999	0	0.0	0	0.0	0	0.0
10,000 - over	0	0.0	2	8.3	1	4.2
TOTAL	24	100.0	24	100.0	24	100.0

Source: 2

Table 17 NET WORTH PER FARM

Net Worth	No. of Farms	%
$1 - 2,999	3	4.1
3,000 - 4,999	1	1.4
5,000 - 9,999	5	6.8
10,000 - 14,999	9	12.3
15,000 - 19,999	10	13.7
20,000 - 29,999	14	19.2
30,000 - 49,999	22	30.1
50,000 - 74,999	7	9.6
75,000 - 99,999	1	1.4
100,000 and up	1	1.4
TOTAL	73*	100.0

Mean: $29,272

Source: 2

Table 18

NET WORTH PER FARM

Net Worth	LOW 1/3 No. of Farms	LOW 1/3 %	MIDDLE 1/3 No. of Farms	MIDDLE 1/3 %	HIGH 1/3 No. of Farms	HIGH 1/3 %
Under $2,999	2	8.3	1	4.2	0	0.0
$ 3,000 - 4,999	1	4.2	0	0.0	0	0.0
5,000 - 9,999	4	16.7	2	8.3	0	0.0
10,000 - 14,999	7	29.1	1	4.2	0	0.0
15,000 - 19,999	4	16.7	6	25.0	0	0.0
20,000 - 29,999	5	20.8	4	16.7	4	16 7
30,000 - 49,999	1	4.2	10	41.6	11	45.8
50,000 - 74,999	0	0.0	0	0.0	7	29 1
75,000 - 99,999	0	0.0	0	0.0	1	4.2
100,000 - and up	0	0.0	0	0.0	1	4.2
TOTAL	24	100.0	24	100.0	24	100.0
AVERAGE NET WORTH PER GROUP	$14,818.00		$25,481.00		$47,229.00	

Source: 2

Table 19 AMOUNT OF DEBT PER FARM

Liabilities	LOW 1/3 No. of Farms	LOW 1/3 %	MIDDLE 1/3 No. of Farms	MIDDLE 1/3 %	HIGH 1/3 No. of Farms	HIGH 1/3 %
None	4	16.7	5	20.8	3	12.5
$ 1 - 499	1	4.2	0	0.0	0	0.0
500 - 999	2	8.3	1	4.2	0	0.0
1,000 - 1,999	9	37.5	5	20.8	1	4.2
2,000 - 3,999	7	29.1	5	20.8	5	20.7
4,000 - 5,999	1	4.2	1	4.2	4	16.7
6,000 - 7,999	0	0.0	0	0.0	1	4.2
8,000 - 9,999	0	0.0	2	8.3	3	12.5
10,000 - 14,999	0	0.0	1	4.2	1	4.2
15,000 - 24,999	0	0.0	3	12.5	4	16.7
25,000 - and up	0	0.0	1	4.2	2	8.3
TOTAL	24	100.0	24	100.0	24	100.0
AVERAGE AMOUNT OF DEBT PER GROUP	$1,630.00		$5,638.00		$8,993.00	

Source: 2

Table 20 DEBT PER FARM BY TYPE

by Items For Which Debt Was Incurred

Item For Which Debt Incurred	Amount Of Debt Per Farm	%
Real Estate (Land & Buildings)	$2,590	46.8
Livestock	122	2.2
Machinery	2,343	42.3
Operating Expenses	195	3.5
Personal And Household	58	1.1
Other	226	4.1
TOTAL	$5,534	100.0

Source: 2

Table 21 AMOUNT AND PERCENT OF TOTAL FARM DEBT BY SOURCE

Source Of Credit	All Farms		Average Amount Per Farm
	Total	%	
F.C.C.	$114,800	28.4	$1,573
Government loans 1/	31,112	7.7	426
Bank	97,460	24.1	1,335
Finance Co.	129,479	32.1	1,774
Private individuals	7,476	1.8	102
Merchandisers	7,135	1.8	98
Other	16,500	4.1	226
TOTAL	$403,962	100.0	$5,534

1/ Homestead Sale and V.L.A.

Source: 2

Table 22 AVAILABILITY OF CREDIT BY FARM OPERATORS

Category	LOW 1/3 No. of Operators	%	MIDDLE 1/3 No. of Operators	%	HIGH 1/3 No. of Operators	%
Can Borrow Sufficient Money	9	37.5	17	70.8	20	84.4
Have Asked For Credit	13	54.1	13	54.1	14	58.4
Have Been Refused Credit	7	29.2	4	16.7	2	8.4

Source: 2

Table 23 CLASSIFICATION OF FARMS BY TYPE

Type of Farm	LOW 1/3 No. of Farms	%	MIDDLE 1/3 No. of Farms	%	HIGH 1/3 No. of Farms	%
Dairy	0	0.0	0	0.0	0	0.0
Other Livestock	0	0.0	2	8.3	0	0.0
Poultry	0	0.0	0	0.0	0	0.0
Wheat	0	0.0	0	0.0	1	4.2
Small Grains	15	62.4	11	45.8	10	41.7
Forage Seed	1	4.2	0	0.0	2	8.3
Mixed a) Livestock	1	4.2	1	4.2	3	12.5
b) Field Crops	4	16.7	9	37.5	7	29.1
c) Other	3	12.5	1	4.2	1	4.2
TOTAL	24	100.0	24	100.0	24	100.0

Source: 2

Table 24 CROP PRODUCTION RETURNS PER ACRE
(1965)

Type of Crop	Acreage Per Farm	Yield Per Acre	Value of Production Per Acre 1/
Wheat	38	12.9 bu.	$19.47
Oats	9	13.1 bu.	6.44
Barley	62	17.1 bu.	14.32
Rapeseed	70	7.0 bu.	15.43
Flax	11	5.8 bu.	16.55
Forage Seed	58	84.0 lbs.	8.26
Hay	13	0.7 tons	11.61
Pasture	2	-	10.00
Summer Fallow	100	-	-

1/ Prices Used:

Wheat	$1.50/bu.	Flax	$ 2.75/bu.
Oats	$0.50/bu.	Forage Seed	$ 0.10/lb.
Barley	$0.85/bu.	Hay	$18.00/ton
Rapeseed	$2.20/bu.	Pasture	$10.00/acre

Source: 2

Table 25

CROP PRODUCTION

Product	LOW 1/3 Average Acreage Per Farm	LOW 1/3 Yield Per Acre	LOW 1/3 Value of Production Per Acre	MIDDLE 1/3 Average Acreage Per Farm	MIDDLE 1/3 Yield Per Acre	MIDDLE 1/3 Value of Production Per Acre	HIGH 1/3 Average Acreage Per Farm	HIGH 1/3 Yield Per Acre	HIGH 1/3 Value of Production Per Acre
Wheat	14	3.2 bu.	$ 4.80	20	7.7 bu.	$11.57	82	15.9 bu.	$23.78
Oats	5	13.9 bu.	6.97	11	12.8 bu.	6.42	11	13.0 bu.	6.52
Barley	33	7.2 bu.	6.10	47	11.8 bu.	10.04	107	17.0 bu.	14.45
Rapeseed	37	3.9 bu.	8.48	77	5.7 bu.	12.63	99	9.2 bu.	20.45
Flax	5	2.5 bu.	6.98	10	3.7 bu.	10.10	17	7.8 bu.	21.52
Forage Seed	30	27.7 lbs.	2.77	56	109.8 lbs.	10.98	88	87.4 lbs.	8.74
Hay	5	0.6 t.	11.50	14	0.5 t.	8.31	20	0.8 t.	14.48
Pasture	1	-	10.00	5	-	10.00	1	-	10.00
Summer Fallow	74	-	-	70	-	-	150	-	-
RELATIVE RETURNS PER ACRE 1/			3.93			8.47			9.81

1/ Average yield/acre x price received per unit.

Source: 2

Table 26 AVERAGE LAND ACREAGE UNDER CROPS BY TYPE

Type of Crop	LOW 1/3 Average Acres Per Farm	LOW 1/3 %	MIDDLE 1/3 Average Acres Per Farm	MIDDLE 1/3 %	HIGH 1/3 Average Acres Per Farm	HIGH 1/3 %
Wheat	14	6.9	20	6.5	82	14.2
Oats	5	2.5	11	3.5	11	1.9
Barley	33	16.2	47	15.2	107	18.5
Rapeseed	37	18.1	77	24.8	99	17.2
Flax	5	2.4	10	3.2	17	3.3
Forage Seed	30	14.7	56	18.1	88	15.2
Hay	5	2.4	14	4.5	20	3.5
Pasture	1	0.5	5	1.6	1	0.2
Summer Fallow	74	36.3	70	22.6	150	26.0
TOTAL		100.0		100.0		100.0
AVERAGE TOTAL CULTIVATED ACRES PER FARM	204		310		577	

Source: 2

Table 27 TANGENT ELEVATOR CEREAL GRAIN DELIVERIES (bushels)

Year	Wheat	Oats	Barley	Other	Total
1965-66	21,082	10,426	48,723	55,524	135,755
1964-65	88,029	10,971	82,203	64,480	245,683
1963-64	68,589	10,503	69,236	40,889	189,217
1962-63	112,318	21,446	59,282	38,575	231,621
1961-62	126,290	25,949	77,886	16,544	246,669
1960-61	82,809	24,223	94,394	5,751	207,177
1959-60	75,684	17,505	94,672	7,356	195,217
1958-59	23,844	5,540	10,372	3,180	42,936
1957-58	51,600	3,705	24,911	--	80,216
1956-57	70,357	6,696	33,060	18,369	128,482
1955-56	45,544	6,987	36,241	12,137	100,909
1954-55	31,144	23,957	107,310	13,414	175,825
1953-54	37,146	47,911	49,533	11,450	146,040
1952-53	19,297	22,892	35,020	7,963	85,172
1951-52	50,288	70,065	3,841	--	124,194
1950-51	15,978	18,566	9,918	--	44,462

Source: 2

Table 28 NUMBER OF OPERATORS WITH VARIOUS KINDS OF LIVESTOCK

Number on Hand	Beef Cattle			Dairy Cattle			Swine			Horses			Poultry		
	L.	M.	H.	L.	M.	H.	L.	M.	H.	L.	M.	H.	L.	M.	H.
None	18	16	15	23	20	21	23	22	19	23	23	20	21	19	19
1 - 9	2	1	0	1	4	2	1	1	1	1	1	3	0	0	0
10 - 24	4	4	4	0	0	1	0	0	2	0	0	1	1	3	1
25 - 49	0	2	3	0	0	0	0	1	0	0	0	0	1	0	2
50 - 99	0	1	0	0	0	0	0	0	2	0	0	0	0	1	1
100 - over	0	0	2	0	0	0	0	0	0	0	0	0	1	1	1
TOTAL	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24

Note: L. means Low 1/3 gross income, M. means Middle 1/3 gross income, and H. means High 1/3 gross income.

Source: 2

Table 29 DISTRIBUTION OF GROSS FARM INCOME

Gross Farm Income	No. of Farms	Per cent of Total
Under $250	3	4.1
$250 - 1,199	16	21.9
1,200 - 2,499	13	17.8
2,500 - 3,749	14	19.2
3,750 - 4,999	9	12.3
5,000 - 7,499	10	13.8
7,500 - 9,999	2	2.7
10,000 - 14,999	3	4.1
15,000 - 19,999	2	2.7
20,000 and up	1	1.4
TOTAL	73*	100.0

Mean: $3,963

Source: 2

Table 30 DISTRIBUTION OF GROSS FARM INCOME

Gross Farm Income	LOW 1/3 No. of Farms	LOW 1/3 %	MIDDLE 1/3 No. of Farms	MIDDLE 1/3 %	HIGH 1/3 No. of Farms	HIGH 1/3 %
Under $250	2	8.3	0	0.0	0	0.0
$ 250 - 1,199	16	66.7	0	0.0	0	0.0
1,200 - 2,499	6	25.0	7	29.2	0	0.0
2,500 - 3,749	0	0.0	14	58.3	0	0.0
3,750 - 4,999	0	0.0	3	12.5	6	25.0
5,000 - 7,499	0	0.0	0	0.0	10	41.7
7,500 - 9,999	0	0.0	0	0.0	2	8.3
10,000 - 14,999	0	0.0	0	0.0	3	12.5
15,000 - 19,999	0	0.0	0	0.0	2	8.3
20,000 and up	0	0.0	0	0.0	1	4.2
TOTAL	24	100.0	24	100.0	24	100.0
AVERAGE GROSS FARM INCOME PER GROUP	$830.00		$2,932.00		$8,290.00	

Source: 2

Table 31

GROSS FARM INCOME BY INCOME LEVEL

Product	LOW 1/3 No. of Farms	LOW 1/3 Cash Income	LOW 1/3 % of Total Income	MIDDLE 1/3 No. of Farms	MIDDLE 1/3 Cash Income	MIDDLE 1/3 % of Total Income	HIGH 1/3 No. of Farms	HIGH 1/3 Cash Income	HIGH 1/3 % of Total Income
Beef Cattle	3	$ 990	5.0	9	$ 8,877	12.6	7	$ 17,160	9.6
Dairy Cattle	3	681	3.5	1	170	0.2	1	2,362	1.3
Hogs	0	0	0.0	4	1,790	2.5	6	9,622	5.4
Poultry	0	0	0.0	0	0	0.0	0	0	0.0
Poultry Products	1	31	0.2	1	1,170	1.7	0	0	0.0
Dairy Products	1	117	0.6	2	670	1.0	2	1,160	0.6
Other (Horses)	1	60	0.3	0	0	0.0	1	395	0.2
Total Livestock		1,879	9.6		12,667	18.0		30,699	17.1
Wheat	5	1,321	6.7	7	3,857	5.5	17	27,064	15.1
Oats	3	745	3.8	0	0	0.0	0	0	0.0
Barley	10	2,741	13.9	11	6,932	9.8	21	24,171	13.5
Rapeseed	15	5,937	30.2	19	25,070	35.5	22	36,861	20.6
Forage Seed	9	1,595	8.1	10	8,469	12.0	13	26,175	14.6
Other	2	625	3.2	3	1,354	1.9	10	13,212	7.4
Total Crop		12,964	65.9		45,682	64.7		127,483	71.2
Total Honey		0	0.0		2,500	3.5		0	0.0
P. F. A. A. Payments	20	3,794	19.3	21	5,155	7.3	23	7.938	4.4
Wheat Board Payments	5	1,030	5.2	10	4,556	6.5	15	13,081	7.3
Transfer Payments		4,824	24.5		9,711	13.8		21,019	11.7
TOTAL		19,667	100.0		70,560	100.0		179,201	100.0

Source: 2

Table 32 DISTRIBUTION OF NET FARM INCOME

Net Farm Income	No. of Farms	%
Below $-5,000	1	1.4
$-4,999 to -3,750	0	0.0
-3,749 to -2,500	3	4.1
-2,499 to -1,200	9	12.3
-1,199 to - 250	18	24.6
- 249 to + 249	8	11.0
250 to 1,199	13	17.8
1,200 to 2,499	13	17.8
2,500 to 3,749	3	4.1
3,750 to 4,999	1	1.4
5,000 to 7,499	3	4.1
7,500 to 9,999	0	0.0
10,000 and over	1	1.4
TOTAL	73*	100.0

Mean: $433

Source: 2

Table 33 DISTRIBUTION OF NET FARM INCOME

Net Farm Income	LOW 1/3 No. of Farms	LOW 1/3 %	MIDDLE 1/3 No. of Farms	MIDDLE 1/3 %	HIGH 1/3 No. of Farms	HIGH 1/3 %
Below $-5,000	0	0.0	1	4.2	0	0.0
$-4,999 to -3,750	0	0.0	0	0.0	0	0.0
-3,749 to -2,500	2	8.3	0	0.0	1	4.2
-2,499 to -1,200	4	16.7	1	4.2	4	16.7
-1,199 to - 250	8	33.3	6	25.0	2	8.3
- 249 to + 249	6	25.0	2	8.3	0	0.0
250 to 1,199	4	16.7	6	25.0	4	16.7
1,200 to 2,499	0	0.0	6	25.0	7	29.1
2,500 to 3,749	0	0.0	2	8.3	1	4.2
3,750 to 4,999	0	0.0	0	0.0	1	4.2
5,000 to 7,499	0	0.0	0	0.0	3	12.4
7,500 to 9,999	0	0.0	0	0.0	0	0.0
10,000 and over	0	0.0	0	0.0	1	4.2
TOTAL	24	100.0	24	100.0	24	100.0
AVERAGE NET FARM INCOME PER GROUP	$-603.00		$201.00		$1,700.00	

Source: 2

Table 34 SOURCES OF NON-FARM INCOME

Source	Average Per Farm	All Farms Total	All Farms %
Non-farm Investments	$ 105	$ 7,680	6.6
Wages Of Operator1/	1,113	81,220	70.6
Wages Of Wife2/	64	4,650	4.0
Welfare3/	45	3,322	2.9
Family Allowance	154	11,248	9.8
Pensions	96	6,980	6.1
TOTAL	$1,577	$115,100	100.0

1/ 42 operators had income from off-farm wages. (57.5%)

2/ 3 wives worked off-farm.

3/ 4 families on welfare.

Source: 2

Table 35 DISTRIBUTION OF NON-FARM INCOME

Non-Farm Income	LOW 1/3 No. of Farms	LOW 1/3 %	MIDDLE 1/3 No. of Farms	MIDDLE 1/3 %	HIGH 1/3 No. of Farms	HIGH 1/3 %
Under $250	2	8.3	10	41.7	9	37.5
$ 250 - 1,199	6	25.0	6	25.0	8	33.3
1,200 - 2,499	5	20.9	3	12.5	5	20.9
2,500 - 3,749	6	25.0	2	8.3	2	8.3
3,750 - 4,999	3	12.5	0	0.0	0	0.0
5,000 - 7,499	2	8.3	3	12.5	0	0.0
Total	24	100.0	24	100.0	24	100.0
AVERAGE NON-FARM INCOME	$2,305.00		$1,355.00		$ 804.00	

Source: 2

Table 36 LAND TENURE

No. of Years	No. of Operators	%
1 - 4	12	16.4
5 - 9	12	16.4
10 - 14	19	26.1
15 - 19	6	8.2
20 - 24	7	9.6
25 - 29	2	2.8
30 - 34	3	4.1
35 - 39	12	16.4
40 and over	0	0.0
TOTAL	74	100.0

Source: 2

Table 37 POPULATION BY FIVE YEAR AGE GROUPS AND SEX FOR ALBERTA

Age Group	TOTAL		MALE		FEMALE	
	#	%	#	%	#	%
0 - 4	179,888	13.5	92,250	6.9	87,638	6.6
5 - 9	159,053	11.9	81,633	6.1	77,420	5.8
10 - 14	130,383	9.8	66,680	5.0	63,703	4.8
15 - 19	99,004	7.4	50,296	3.8	48,708	3.7
20 - 24	89,154	6.7	44,403	3.3	44,751	3.4
25 - 34	192,571	14.5	100,414	7.5	92,157	6.9
35 - 44	172,623	13.0	87,593	6.6	85,030	6.4
45 - 54	128,547	9.6	67,212	5.0	61,335	4.6
55 - 64	87,643	6.6	48,052	3.6	39,591	3.0
65 - 69	31,354	2.4	17,166	1.3	14,558	1.1
70 and over	61,354	4.6	33,504	2.5	27,670	2.1
TOTAL	1,331,944	100.0	689,383	51.6	642,561	48.4

Source: 3

Table 38 POPULATION BY FIVE YEAR AGE GROUPS AND SEX FOR TANGENT AREA

Age Group	TOTAL #	TOTAL %	MALE #	MALE %	FEMALE #	FEMALE %
0 - 4	112	13.8	50	6.2	62	7.6
5 - 9	122	15.0	73	9.0	49	6.0
10 - 14	117	14.4	58	7.1	59	7.3
15 - 19	68	8.4	45	3.4	23	2.8
20 - 24	52	6.4	32	3.9	20	2.5
25 - 34	94	11.6	51	6.3	43	5.3
35 - 44	97	11.9	54	6.7	43	5.3
45 - 54	77	9.5	42	5.2	35	4.3
55 - 64	43	5.3	32	3.9	11	1.3
65 - 69	10	1.2	7	.9	3	.4
TOTAL	812	100.0	456	56.2	356	43.8

Source: 2

Table 39 EDUCATION OF FARM OPERATORS

Years of Schooling		LOW 1/3 #	LOW 1/3 %	MIDDLE 1/3 #	MIDDLE 1/3 %	HIGH 1/3 #	HIGH 1/3 %
No Schooling:		1	4.2	1	4.2	0	0.0
Elementary:	1 - 4	1	4.2	3	12.5	0	0.0
	5 - 6	5	20.8	4	16.7	3	12.5
High School:	7 - 8	6	25.0	8	33.3	8	33.3
	9	6	25.0	2	8.3	8	33.3
	10 - 11	3	12.5	3	12.5	2	8.3
	12	2	8.3	2	8.3	2	8.3
University:	1 - 2	0	0.0	1	4.2	1	4.2
TOTAL		24	100.0	24	100.0	24	100.0
AVERAGE EDUCATION OF FARM OPERATORS		7.6		6.8		8.6	
AVERAGE AGE OF FARM OPERATORS		40.7		45.1		43.2	

Source: 2